3.0 AFFECTED ENVIRONMENT

3.1 DESCRIPTION OF AFFECTED ENVIRONMENT

This section describes the existing environment of the area that may be affected by the Proposed Action or alternatives as required by CEQ Guidelines (1502.15). Resources that are described include Land Resources, Water Resources, Air Quality, Biological Resources, Cultural Resources, Socioeconomic Conditions, Resource Use Patterns, Public Services and Environmental Justice; other values include Noise, Hazardous Materials and Visual Resources.

The proposed project boundaries will be the Project Area described for the following resources, unless otherwise described. For the resources described below, the Project Area may differ depending on the geographic vastness of the resource and degree it would influence the surrounding environment.

3.2 LAND RESOURCES

3.2.1 Topography

The information regarding the topography at both the South Bend and Elkhart property was obtained from the U.S. Geological Survey (USGS). The Indiana Department of Natural Resources houses copies of the USGS quad maps for the state and digital copies of the 1:24,000-scale topographic maps, also known as 7.5-minute quadrangles can be accessed digitally through several online websites including the USGS site.

3.2.1.1 South Bend Site

The South Bend Site is located in portions of Sections 21, 22, and 27 of Township 37N Range 2E, St. Joseph County, Indiana. The topography of the South Bend Site is characterized as hilly to gently rolling, with altered surface drainage.

The South Bend Site is characterized by an undulating surface with no abrupt or severe slopes. The topographic elevation of the site ranges from approximately 840 feet (NAVD88) at its highest point in the southeast portion of the project site to approximately 720 feet (NAVD88) along the northwest edge of the project site (**Figure 3.2-1**). Existing drainage patterns flow southeast to northwest discharging into a manmade drainage channel flowing east to west. Based on an inspection of the site, there was no evidence of slope erosion or unstable slope conditions observed.

3.2.1.2 Elkhart Site

The Elkhart Site is located in Section 31 of Township 37N Range 5E, Elkhart County, Indiana. The topography of the Elkhart Site is characterized as gently undulating with some small, closed

depressions and one natural drainage feature. The natural drainage feature is an intermittent stream which flows westward into Baugo Creek ultimately discharging into Baugo Bay of the St. Joseph River.

The Elkhart Site is relatively level in comparison to the South Bend site with elongated knolls and depressions. The topography across the site ranges from approximately 830 feet (NAVD88) at the eastern edge of the project area and slopes westward to 795 feet (NAVD88). **Figure 3.2-2** shows the existing topography across the Elkhart Site.

3.2.2 Soils

The South Bend and Elkhart project areas were mapped to project the various soil types using the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service soil resource reporting tools, surveyed for this region in 2011. The soil units provide a summary of the major physical characteristics for each unit with management recommendations. The data that follows is a synopsis of USDA NRCS custom soil resource reports for those soils which are within the boundaries of the project sites. Additional physical characteristics are listed in the tables found in Appendix C, included are: farmland status, drainage condition, erosion class, runoff, liquid limit rating, and hydric soil presence.

The land capability classification system used by NRCS groups soils by Capability Class. The Soils Capability Class indicates limitations for practical use for food, fiber or forage production. Classes are designated by Roman numerals I through VIII, with I being the least restricted and VIII being severely limited for use in commercial crop production. Prime soils are those located on land which has a combination of physical and chemical characteristics best suited to produce forage, feed, food and other crops. Soils Capability Class I and II soils form prime crop and pasture land, which, under provisions of the Farmland Protection Policy Act of 1980, must be evaluated in implementation of NEPA for potential environmental effects if they are to be used for non-agricultural development. Private lands are not subject to the Farmland Protection Policy Act, if owners choose to develop lands for non-agricultural uses.

3.2.2.1 South Bend Site

The South Bend project area is a total of ±165.81 acres, with 13 different soil series (21 total different units) occurring within the project area. Those soils covering the most area are the Hillsdale Series at 29% and Martinsville Series at 21%, other soils make up 10% or less for each soil series. Some soil units have been classified as hydric and are noted as such in their descriptions. Figure 3.2-3 depicts the soil group locations in the South Bend site area, and the table in Appendix C gives characteristics inherent to each soil unit which could limit constructability.

The Hillsdale Series is found throughout the South Bend site in four different units, two with a high percentage of Tracy components. The Hillsdale sandy loams (HkkA) occur on 0 to 1% side slopes of end moraines. The parent material of the Hillsdale unit, which is 80% of the major components, is a coarse loamy till. This soil is well drained, with a moderately high to high capacity to transmit water, and a moderate available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. The remaining 20% of minor components in this unit have characteristics similar to the HkkA. Hillsdale sandy loams (HkkB) occur on 1 to 5% side slopes of eroded end moraines. The unit characteristics for HkkB are the same as those described for HkkA other than the slopes are steeper.

Hillsdale-Tracy sandy loams (HkpC2) occur on 5 to 10% side slopes of eroded end moraines. The parent material of the Hillsdale unit which is 55% of the major unit components are a coarse-loamy till and the parent material of the Tracy unit which is 30% of the major unit components are loamy outwash over sandy outwash. This soil is well drained, with a moderately high to high capacity to transmit water, and a moderate available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. This unit contains 15% minor components which have characteristics which do not differ greatly from the Hillsdale or Tracy units. Hillsdale-Tracy sandy loams (HkpD2) occur on 10 to 18% side slopes of eroded end moraines. The unit characteristics for HkpD2 are the same as those described for HkpC2 other than the slopes are steeper.

The Martinsville Series can be found in the middle area of the South Bend Site, three units intermingle. Martinsville loam (MfaA) occurs on 0 to 1% side slopes of till plains and outwash plains. The parent material of the Martinsville unit, which is 70% of the major components, is a loamy outwash. This soil is well drained, with a moderately high to high capacity to transmit water, and a high available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. The remaining 30% of minor components in this unit have characteristics similar to the Martinsville (MfaA), many occur on moraines. Martinsville loam (MfaB2) occurs on 1 to 5% side slopes of till plains and outwash plains. The unit characteristics for MfaB2 are mostly the same as those described for MfaA. The difference is the MfaB2 occurs at steeper slopes, it is eroded, and it has a moderate amount of available water instead of a high available water capacity. The Martinsville loam (MfaC2) occurs on 5 to 10% side slopes of till plains and outwash plains. The unit characteristics for MfaC2 are mostly the same as those described for MfaA. The difference is the MfaC2 occurs at steeper slopes, it is eroded, and it has a moderate amount of available water instead of a high available water capacity.

The Adrian muck (AbhAU) occurs on the 0 to 1% slopes in depressions of outwash plains, terraces, and till plains. The parent material of the Adrian unit, which is 75% of the major components, is herbaceous organic material over sandy outwash. This soil is very poorly drained, with a moderately high to high capacity to transmit water, and a very high available water capacity. The frequency of flooding is none, but the frequency of ponding is high. The water table depth is about

zero inches, or at the surface. This unit is made up of 25% minor components which are also undrained and have similar characteristics as the Adrian muck. The Adrian muck has been classified as hydric by the NRCS.

The Auten loam (AxvA) occurs on the 0 to 1% side slopes of outwash plains, terraces, and moraines. The parent material of the Auten unit, which is 82% of the major components, is loamy outwash over sandy and gravelly outwash. This soil is somewhat poorly drained, with a moderately high to high capacity to transmit water, and a low available water capacity. The frequency of flooding and ponding is none, and the depth to the water table is between 6 to 18 inches. This unit is made up of 18% minor components have characteristics similar to the Auten loam.

The Brookston loam (BuuA) occurs on the 0 to 1% slopes of depressions on till plains. The parent material of the Brookston unit, which is 80% of the major components, is loamy till. This soil is poorly drained, with a moderately high capacity to transmit water, and a high available water capacity. The frequency of flooding is none, but ponding occurs frequently. The depth to the water table is zero inches and could be at the ground surface. This unit is made up of 20% minor components occur on various locations of till plains as opposed to the Brookston unit which only occur in depressions. The Brookston loam has been classified as hydric by the NRCS.

The Milford silty clay loam (MouA) occurs on 0 to 1% depressions on lake plains. The parent material of the Milford unit, which is 85% of the major components, is clayey lacustrine deposits. This soil is poorly drained, with a moderately high capacity to transmit water, and a high available water capacity. The flooding occurrence frequency is none, but the potential for ponding is frequent. The depth to the water table is zero inches and could be at the surface in some locations. The remaining 15% of minor components in this unit have characteristics similar to the Milford. All components of the Milford silty clay loam, major and minor, have been classified as hydric by the NRCS.

Two units of the Rensselaer Series occur in the South Bend site. The Rensselaer mucky loams (RenA) occur on 0 to 1% depressions on outwash plains and depressions on till plains. The parent material of the Rensselaer unit, which comprises 85% of the major components, is loamy outwash. The soil is poorly drained, has a moderately low to moderately high capacity to transmit water, and a high available water capacity. The flooding occurrence is none, but the potential for ponding is frequent. The depth to the water table is zero and could be at the surface in some locations. The remaining 15% of minor components in this unit have similar characteristics as the Rensselaer and all occur in depressions. All components of the Rensselaer mucky loam (RenA), major and minor, have been classified as hydric by the NRCS. The Rensselaer loams (ReyA) occur on 0 to 1% depressions on outwash plains and depressions on stream terraces. The loamy outwash parent material comprises 75% of the major components. The remaining aspects of the Rensselaer loam are the same as those described for the Rensselaer mucky loam. The Rensselaer loam has been classified as hydric by the NRCS.

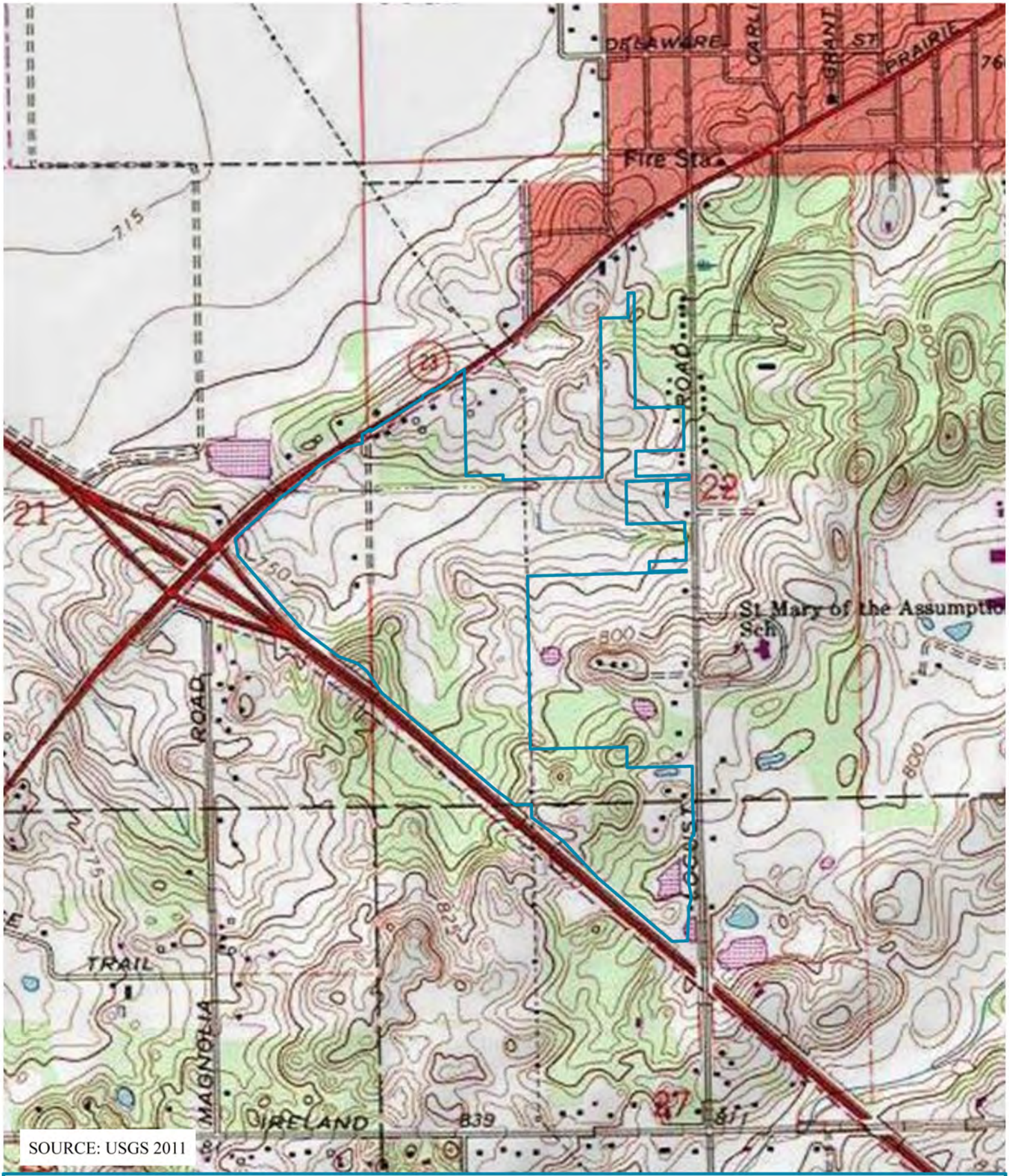

FIGURE 3.2-1. SOUTH BEND PROJECT AREA ON USGS QUAD

PROPOSED PROJECT AREA

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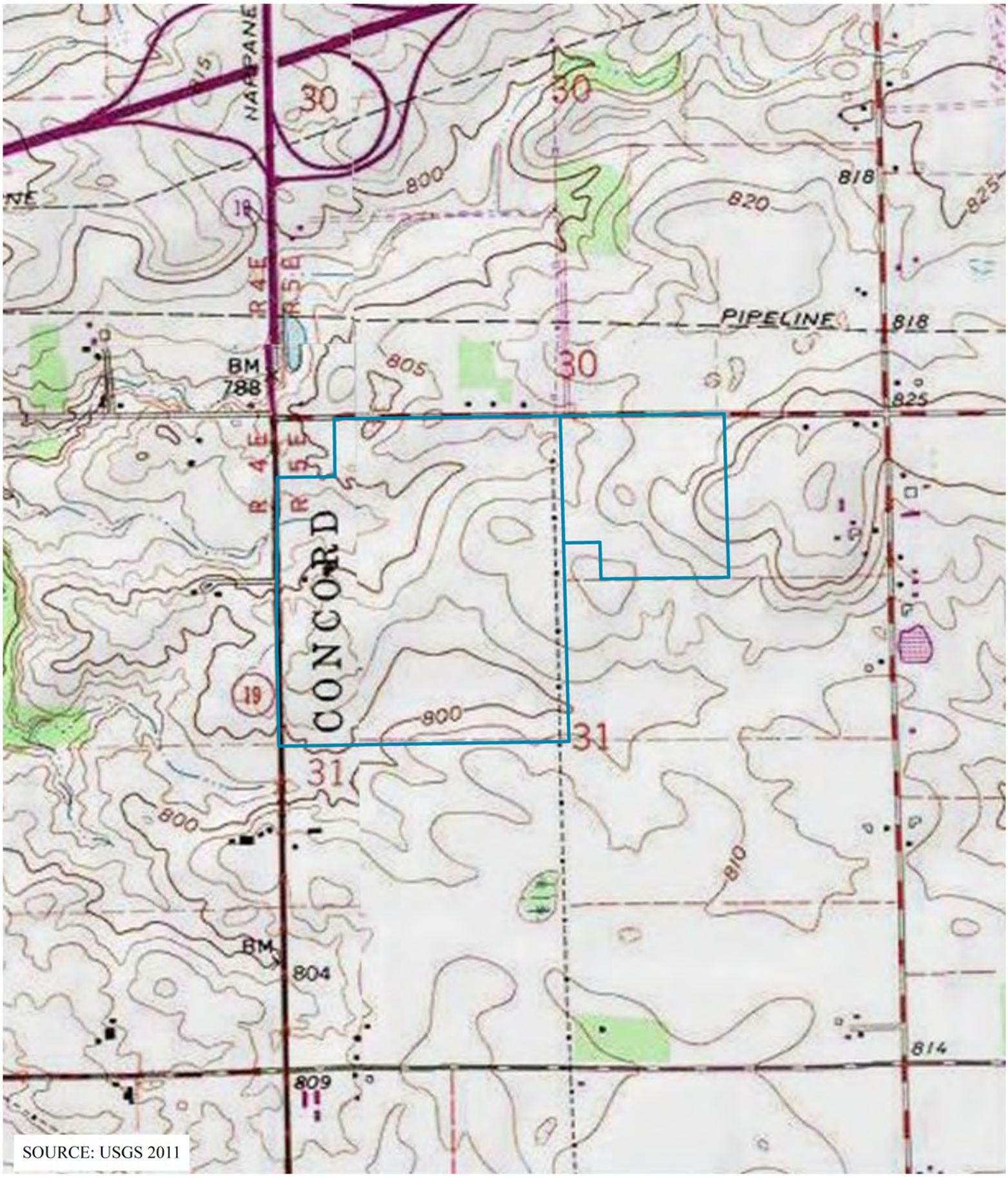

SOURCE: USGS 2011

FIGURE 3.2-2. ELKHART PROJECT AREA ON USGS QUAD

PROPOSED PROJECT AREA

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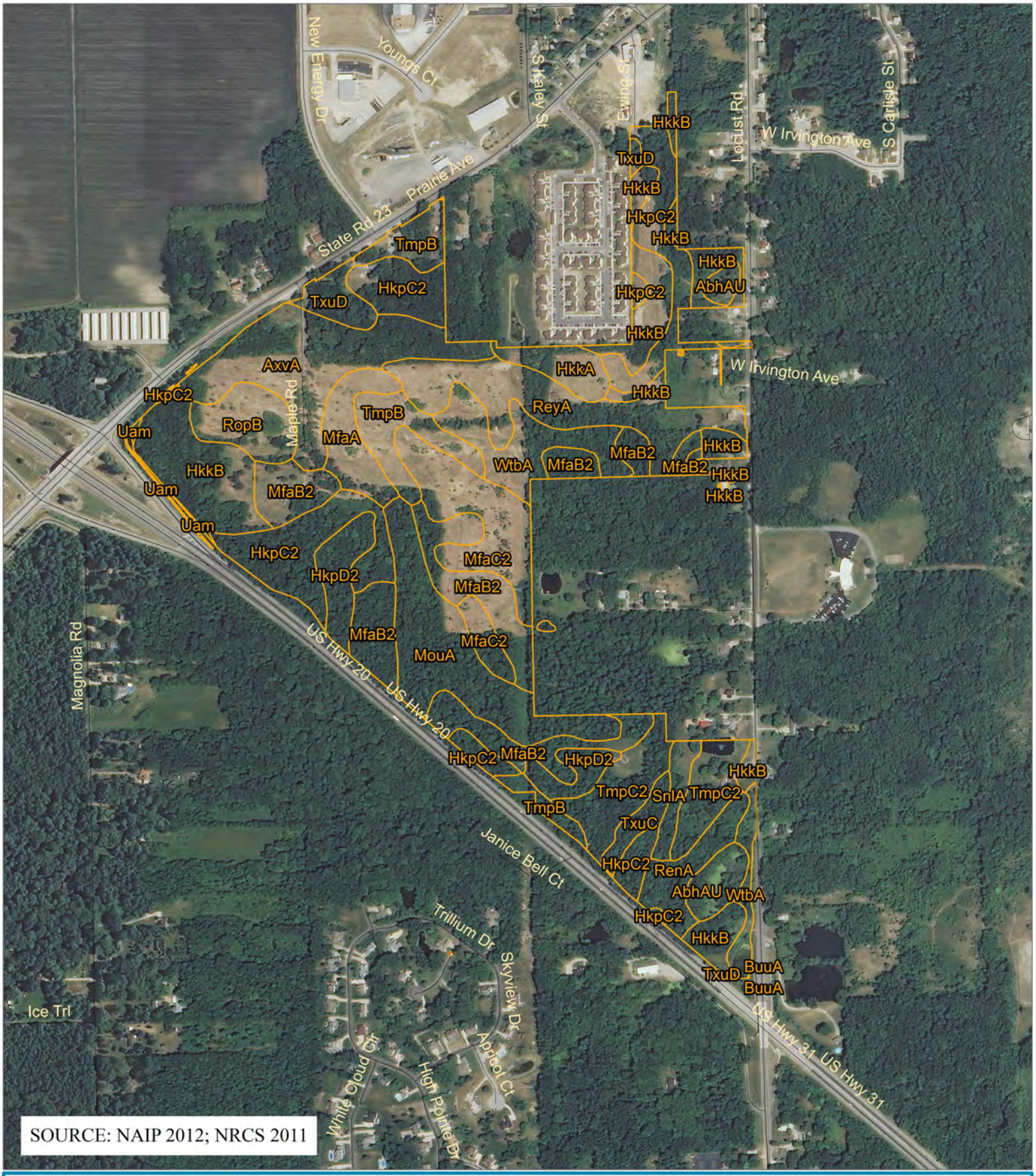

FIGURE 3.2-3. SOUTH BEND NRCS SOIL SURVEY

SOILS CLIPPED TO PROJECT AREA

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The Riddles-Oshtemo fine sandy loams (RopB) occur on 1 to 5% side slopes of till plains and moraines. The parent material of the Riddles loams, which comprise 50% of the major components, is loamy till. The Oshtemo loams, which comprise 35% of the major components, come from loamy outwash over sandy outwash as the parent material. The Riddles-Oshtemo fine sandy loams are well drained, have a low to high capacity to transmit water, and a moderate to high available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. The remaining 15% of minor components have characteristics similar to the Riddles-Oshtemo fine sandy loams and they also occur on outwash plains.

The Southwest silt loam (SnlA) occurs on 0 to 1% slopes of till plain depressions. The parent material is a silty alluvium over clayey alluvium; it comprises 75% of the major components. The Southwest silt loam are poorly drained, have a moderately high capacity to transmit water, and a very high available water capacity. The frequency of flooding is none, however ponding happens frequently. The depth to the water table is zero inches; water is sometimes at the ground surface. The remaining 25% of the minor components in this unit have similar characteristics as the Southwest silt loam; they occur in depressions, but some are drained. The Southwest silt loam has been classified as hydric by the NRCS.

The Tracy Series is found at opposite ends of the South Bend site as two separate units. The Tracy sandy loam (TmpB) occurs on the 1 to 5% side slopes of outwash plains. The parent material of the Tracy unit, which is 80% of the major components, is loamy over sandy outwash. This soil is well drained, with a moderately high to high capacity to transmit water, and a moderate available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. This unit is made up of 20% minor components which are of the same characteristics as the Tracy sandy loam (TmpB). The Tracy sandy loam (TmpC2) can be found on 5 to 10% side slopes of outwash plains. The unit characteristics for TmpC2 are mostly the same as those described for TmpA. The difference is the TmpC2 occurs at steeper slopes and it is eroded.

The Tyner Series exists at opposite ends of the South Bend site; two units of this series occur here and are described further. The Tyner loamy sand (TxuC) occurs on 5 to 10% side slopes of outwash plains. The parent material of the Tyner unit, which is 85% of the major components, is sandy outwash. The soil is excessively drained, with a high to very high capacity to transmit water, and a low available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. The remaining 15% of minor components have characteristics similar to the Tyner loamy sand (TxuC), however they occur on a variety of landforms. The Tyner loamy sand (TxuD) occurs on 10 to 18% side slopes of outwash plains. The unit characteristics for TxuD are mostly the same as those described for TxuC; the difference is that the TxuC occurs at steeper slopes.

The Udorthents loamy unit (Uam) occurs on side slopes of till plains. Udorthents have a loamy to fine sandy loam texture. This soil has anywhere from very slow to rapid permeability, and this is

based on the level of compaction. The available water capacity is low or moderate. The soil is classified to occur in urban areas as fill, which is further enforced due to its location at the intersection of State Route 23 and Highway 31.

The Whitaker loam (WtbA) occurs on 0 to 1% side slopes of outwash plains, moraines, and stream terraces. The parent material, which is 70% of the major components, is loamy outwash. The Whitaker loam is somewhat poorly drained, with a moderately high to high capacity to transmit water, and a high available water capacity. The frequency of flooding and ponding is none, and the depth to the water table is about 6 to 18 inches. The remaining 30% of the minor components have characteristics similar to the Whitaker loam, but they also occur on till plains.

3.2.2.2 Elkhart Site

The Elkhart project area is a total of 173.42 acres, with 4 different soil series (8 units total) occurring within the project area. Those soils covering the most area are the Crosier Series at 77%; the remaining soils are the Brookston Loam at 11%, the Riddles Series at 5%, and the Williamstown Series at 7%. Some soil units have been classified as hydric and are noted as such in their descriptions. **Figure 3.2-4** depicts the soil group locations in the South Bend site area, and the table in **Appendix C** gives characteristics inherent to each soil unit which could limit constructability.

The Brookston loam (BuuA) occurs on the 0 to 1% slopes of depressions on till plains. The parent material of the Brookston unit, which is 80% of the major components, is loamy till. This soil is poorly drained, with a moderately high capacity to transmit water, and a high available water capacity. The frequency of flooding is none, but ponding occurs frequently. The depth to the water table is about zero inches and could be at the ground surface. This unit is made up of 20% minor components occur on various locations of till plains as opposed to the Brookston unit which only occur in depressions. The Brookston loam has been classified as hydric by the NRCS.

The Crosier Series is widespread at the Elkhart site; there are two distinct units found at this location. The Crosier loam (CvdA) occurs on the 0 to 1% side slopes of till plains. The parent material of the Crosier unit, which is 85% of the major components, is loamy till. This soil is somewhat poorly drained, with a moderately low to moderately high capacity to transmit water, and a moderate available water capacity. The frequency of flooding and ponding is none, and the depth to the water table is 6 to 18 inches. The remaining 15% minor components have characteristics similar to the Crosier unit. The Crosier loam (CvdA) has been classified as hydric by the NRCS. The Crosier loam unit (CvdB) occurs at 1 to 4% slopes; the remaining characteristics for CvdB are the same as those described for CvdA.

The Riddles Series is found in many locations at the Elkhart site, three specific units have been found to occur here. The Riddles-Oshtemo fine sandy loams (RopA) occur on 0 to 1% side slopes of till plains and moraines. The parent material of the Riddles loams, which comprise 50% of the major components, is loamy till. The Oshtemo loams, which comprise 35% of the major

components, come from a parent material of loamy outwash over sandy outwash. The Riddles-Oshtemo fine sandy loams are well drained, have a low to high capacity to transmit water, and a moderate to high available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. The remaining 15% of minor components have characteristics similar to the Riddles-Oshtemo fine sandy loams (RopA) and they also occur on outwash plains. The Riddles-Oshtemo fine sandy loams (RopB) occur at 1 to 5% slopes; the remaining characteristics for RopB are the same as those described for RopA.

The Riddles-Metea complex occurs on 5 to 10% side slopes of eroded till plains. The parent material of the Riddles unit, which is 55% of the major components, is loamy till. The parent material of the Metea unit, which is 30% of the major components, is sandy outwash over loamy till. The Riddles-Metea complex is well drained, has low to moderately high capacity to transmit water, and a moderate to high available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is more than 80 inches. The remaining 15% of minor components have characteristics similar to the Riddles-Metea complex.

The Williamstown Series is at two locations on the Elkhart site, each of a different unit. The Williamstown loam (WoaA) occurs on 0 to 1% side slopes of till plains. The parent material of the Williamstown, which is 85% of the major components, is loamy till. This unit is moderately well drained, with low to moderately high capacity to transmit water, and a low available water capacity. The frequency of flooding or ponding is none, and the depth to the water table is about 18 to 30 inches. The remaining 15% of minor components are similar to the Williamstown loam (WoaA), some do occur on moraines.

The Williamstown-Crosier complex (WobB) occurs on 1 to 5% side slopes of till plains and moraines. The Williamstown unit description is the same as the WoaA description. The Crosier unit, which is 30% of the major components, also has a loamy till parent material. The Crosier unit is moderately well drained, has moderately low to moderately high capacity to transmit water, and a moderate available water capacity. The frequency of flooding and ponding is none, and the depth to the water table is about 6 to 18 inches. The remaining 20% of minor components are similar to the Williamstown-Crosier complex.

3.2.3 Geological Setting and Mineral Resources

The information regarding the geological setting and mineral resources at both the South Bend and Elkhart property was obtained from the Indiana Geological Survey (IGS). The Indiana Geological Survey is an official agency of the U.S. state of Indiana responsible for geological research and the dissemination of information about the state's energy, mineral and water resources.

3.2.3.1 South Bend Site

The South Bend Site is located in the Devonian Ellsworth Shale; it is a green shale with black shale in the lower part. The South Bend Site is located in the Kankakee Drainageways physiographic province (IUPUI 2007). The following descriptions characterize the Site from deepest (bedrock) to the land surface.

- [Geology/Bedrock Elevation] The South Bend project site intersects the isoline where the bedrock elevation is 550 feet above sea level (FASL) via Indiana Geological Survey Miscellaneous Map 36, 600 FASL to the direct east, 500 FASL to the southwest, and 550 FASL directly west (IGS MM36 2011a and IGS MM48 2011c).
- [Geology/Glacial Quaternary] Wisconsinan age, mixed drift lithology, complex drift depositional association at the project location and Holocene age muck within one-quarter mile of the project location. Mixed drift is the mélange of materials carried and deposited by glacial activity (IGS MM 49 2011d).
- [Geology/Surficial Unconsolidated Thickness] The South Bend site is located in approximately 200 feet of unconsolidated material. The southeast portion of the site is over a minimum thickness of 200 feet and a maximum thickness of 250 feet. To the north the thickness of unconsolidated material is between 150 feet and 200 feet. The isoline dividing at 200 feet segments the site into a southern half and a northern half. The elevation of unconsolidated material is highly variable with an area of 100 feet minimum thickness 1.5 miles away. This means it is possible for the thickness of unconsolidated material to vary by 150 feet (IGS MM 48 2011b).

3.2.3.2 Elkhart Site

The Elkhart Site is located in the Devonian Ellsworth Shale; it is a green shale with black shale in the lower part. The Elkhart Site is located in the Plymouth Morainal Complex physiographic province (IUPUI 2007).

- [Geology/Bedrock Elevation] Bedrock elevation is 600 FASL. This bedrock elevation is widespread without much elevation change (IGS MM36 2011a and IGS MM48 2011c).
- [Geology/Glacial Quaternary] Wisconsinan age, loam to silty clay loam, till depositional association at the project location and Holocene age muck within three-quarter mile (IGS MM 49 2011d).
- [Geology/Surficial Unconsolidated Thickness] The Elkhart Site is located in minimum thickness of 200 feet and a maximum thickness of 250 feet. To the north and west the thickness of unconsolidated material is between 150 feet and 200 feet. To the south the thickness of unconsolidated material is between 250 feet and 300 feet (IGS MM 48 2011b).

According to the Indiana Geological Survey, Indiana contains a multitude of mineral resources which have been readily mined. Specifically to northern Indiana—coal, peat, and marl have been

FIGURE 3.2-4. ELKHART NRCS SOIL SURVEY

SOILS CLIPPED TO PROJECT AREA

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mined in the past (IGS 2011b). There are no known mapped mines within either the South Bend or Elkhart Sites as displayed by the EPA's Enviromapper (EPA 2009). There is also no visual evidence of mining activity, and the field survey did not indicate past or present mines or quarries.

3.3 WATER RESOURCES

The BIA has identified the following entities to either have jurisdiction by law 40 CFR 1508.15 or special expertise 40 CFR 1508.26 for water resources impacted by the alternatives. Jurisdiction by law means agency authority to approve, veto, or finance all or part of the proposal. Special expertise means statutory responsibility, agency mission, or related program experience with the following water resources. So the following agencies have valuable information regarding the existing and predicted conditions of the water resources addressed in this EIS. Further, if these entities disagree with BIA's determination of the impacts of the alternatives or span of alternatives, courts have determined that disagreement by the following entities to mean "highly controversial" in the NEPA definition 40 CFR 1508.27(b)(4). Highly controversial is one of the criteria of significance of impacts. See Section 4.1.1 for more detail.

Indiana state laws regulating storm water management (327 IAC 15-5), Rule 5 and Rule 13, were enacted to regulate construction site runoff and adhere to Federal Clean Water Act mandates. Rule 13 requires that small municipalities and counties with urbanized areas put programs in place to improve storm water quality. These rules are part of the state pollution prevention rules. The Environmental Protection Agency is the governing authority in terms of the CWA, but the Indiana Department of Environmental Management enforces these rules. Local governments including St. Joseph County and the Greater Elkhart County Storm Water Partnership have created ordinances and checklists to assist developers in meeting these objectives.

The Federal Emergency Management Agency (FEMA) is the governing authority that maintains Flood Insurance Studies and Flood Insurance Rate Maps for priority streams and rivers, and areas of high development or future growth, based on state priorities and available funding.

The Safe Drinking Water Act defines National Primary Drinking Water Regulations as promulgated by the EPA. These are legally enforceable standards that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water.

3.3.1 SOUTH BEND SITE

3.3.1.1 Surface Water, Drainage, Flooding

According to the National Oceanic and Atmospheric Administration (NOAA), average annual precipitation for the City of South Bend is approximately 39.7 inches per year, with 100-year and 50-year, 24-hour cumulative rainfall totals of 6.3 inches and 5.6 inches, respectively. Rainfall in

South Bend is fairly well distributed throughout all months of the year, but does range from a low of 5.0-percent total rainfall occurring in February to a high of 10.6-percent of the rainfall occurring in June (NOAA 2012).

Watershed

The project site in South Bend is located at the highpoint of the divide between the Upper Mississippi Drainage Basin and the Great Lakes Drainage Basin. The majority of the site lies in the Kankakee River Watershed of the Upper Mississippi Drainage Basin, but sections of land on the eastern portion of the site drain in the opposite direction towards the St. Joseph River Watershed in the Great Lakes Drainage Basin (**Figure 3.3-1**). Since the boundary between these two watersheds runs through the project site, it is reasonable to define the Project Area for the South Bend Site in both the Kankakee Watershed and the St. Joseph Watershed.

The majority of the project site is located locally within the Dixon West – Place Ditch Subwatershed (Hydrologic Assessment Unit [HUC] 12 071200010205) of the Kankakee River Watershed, as illustrated in **Figure 3.3-2**. This area is comprised of approximately 21 square miles at the headwaters of the Kankakee River. The Kankakee River Watershed drains to the Mississippi River which then empties into the Gulf of Mexico. The eastern section of the project site is located in the Auten Ditch Subwatershed (HUC 040500012205), which is a 35-square mile subwatershed of the St. Joseph River Watershed, as illustrated in **Figure 3.3-3**. This 35-square mile subwatershed serves as a major tributary leading to the St. Joseph River. The Auten Ditch Subwatershed is a portion of the St. Joseph River Watershed's 4,670-square mile tributary region which encompasses 15 counties in Michigan and Indiana, and ultimately empties into Lake Michigan.

Two primary surface water conveyances are present on the east side of Maple Road that drain storm water from the eastern two thirds of the site and adjacent sites to the north, west, and south of the site in the Kankakee Watershed (**Figure 3.3-4**). These conveyances range between 1 and 2 feet wide at the bottom of the channel and range between 1-2 feet deep throughout the project site during low flow periods. In general, the conveyances are heavily vegetated with trees and brush. The surface water conveyances merge and flow through a single corrugated metal culvert under Maple Road near the north side of the project site, approximately 400 feet south of the Maple Road/ Prairie Avenue intersection. West of Maple Road, the single storm water conveyance exits the property via a single 60-inch diameter corrugated, elliptical metal culvert under Prairie Avenue, before emptying into Dixon West – Place Ditch.

Topographically, the site rises from a low elevation of about 730 feet on the western portion of the site to a high of over 840 feet near the southeastern corner of the site. This southeastern portion represents the divide between the Kankakee River Watershed in the upper Mississippi Drainage Basin and the St. Joseph River Watershed in the Great Lakes Drainage Basin. Storm water which accumulates to the east of this divide drains southeast to the U.S. Highway 31 right-of-way ditch

and then continues to flow towards the St. Joseph River.

Surface Water Modeling

The majority of surface water runoff from the project site exits the property via a single 60-inch diameter elliptical culvert under Prairie Avenue (see **Figure 3.3-4**). The software, Hydroflow, was used to model the existing storm water runoff. The downstream limits of the model extend to the culvert outlet under Prairie Avenue, exiting the South Bend site.

During the 100-year, 24-hour storm, the culvert currently restricts storm flows from exiting the property. This results in pooling on the upstream side of the culvert. The surface area of the ponding is approximately one acre that develops during the 100-year, 24-hour storm peak.

Storm water from the northern portion of the property outside the Prairie Avenue culvert tributary region discharges via overland flow paths to the north and has been modeled accordingly. The southern portion of the property outside the Prairie Avenue culvert tributary region drains to the southeast via overland flow paths. This area has not been modeled because no development or impact is proposed for this portion of the property and it is to remain in its current natural condition.

The approximate peak storm water discharge rates were calculated using the respective tributary drainage areas. This includes both areas to be developed and those areas that would not be affected by proposed development. The existing land use characteristics based on site visits are consistent with the woodland forest designation (USDA NRCS 2013). Soils on the site that were obtained from the county Soil Survey Map, show the site containing primarily Hydrologic Soil Group (HSG) B soils (USDA NRCS 2013). The combination of soil group and land use type defines the Curve Number used in the NRCS Runoff Curve Number Method for hydrologic modeling calculations. The total existing conditions storm water discharges for corresponding tributary areas are listed in **Table 3.3-1**. The variables used to model these tributaries and calculate the storm water runoff are detailed in **Table 3.3-2**.

Table 3.3-1
Existing On-Site Discharge During 100-Year, 24-Hour Storm Event

Discharge Location	Tributary Drainage Area (acres)	Existing Peak Runoff (cfs)
Prairie Avenue Culvert	305	225
Northeast Overland	10.5	10.5

cfs – cubic feet per second

Table 3.3-2
Existing Watershed Variables

Watershed Label	Area (acres)	Curve Number	Time of Concentration (min)
A	30	55	41
B	103	55	83
C	65	55	48
D	58	55	45
E	14	55	42
F	35	55	37

Existing storm water runoff peak flow calculations also include areas from outside the project area to account for watershed-level drainage effects. Those areas are included in the peak discharge calculations and are based on existing development densities. The offsite areas have limited residential development or are undeveloped based on visual inspection from aerial photography, and as a result have very low development densities. Land use changes outside of the project site are outside the scope of this project and are the responsibility of each upstream landowner.

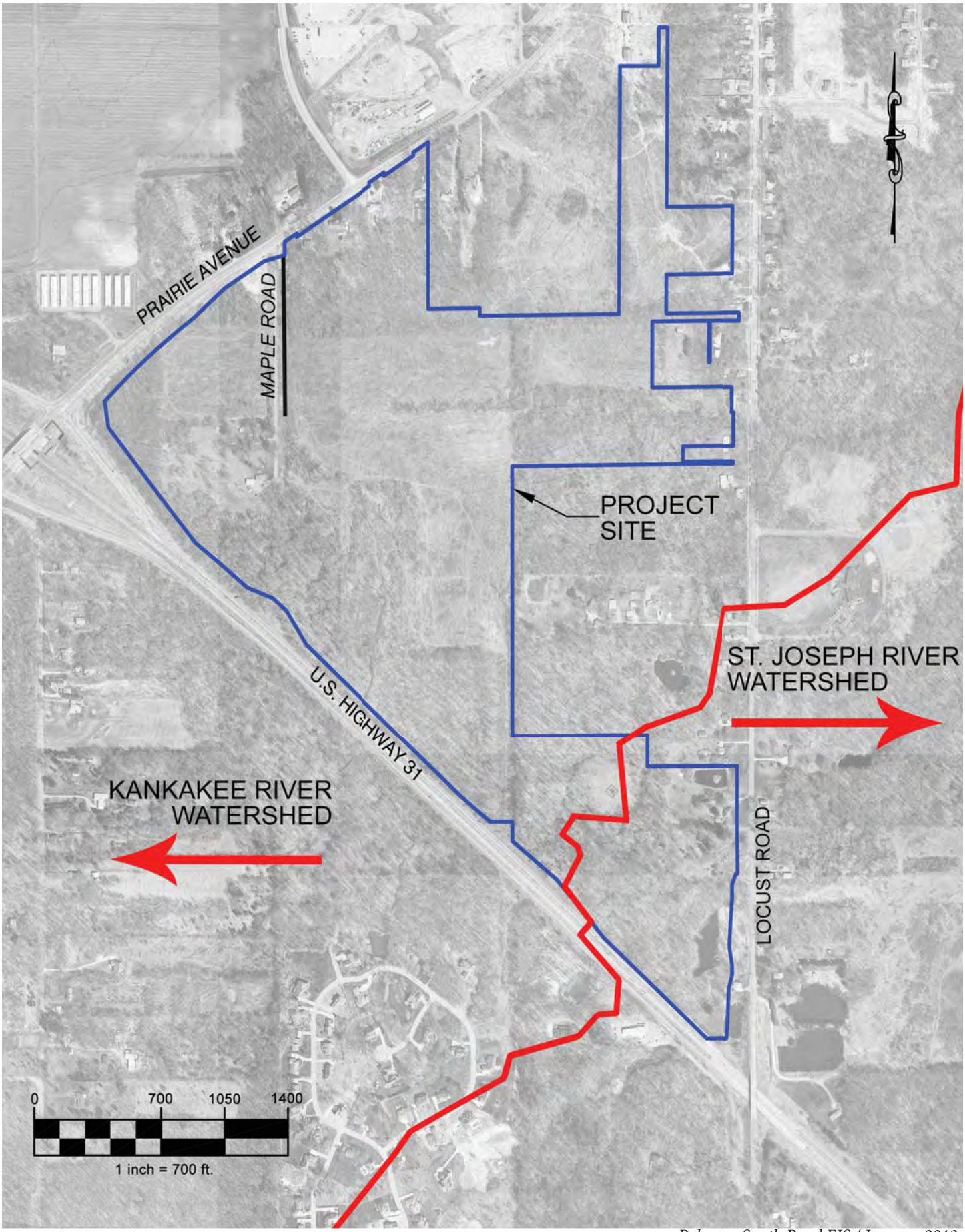
Floodplain

As shown in **Figures 3.3-5 and 3.3-6**, the project area is not located in the Special Flood Hazard Area as mapped by the Federal Emergency Management Agency Flood Insurance Rate Map. A countywide study was completed in 2011; however, the stream within the South Bend project site was not evaluated, so the map panel was not printed. Another more recent map from FEMA's Mapping Information Platform is shown in **Figure 3.3-7** to confirm that the project area is not in the Special Flood Hazard Area.

3.3.1.2 Groundwater

Substantial quantities of groundwater are stored in unconsolidated glacial deposits that underlie the project site. These deposits supply water that can be used for many purposes, often requiring little to no treatment. Below these glacial deposits, bedrock deposits consisting of the Devonian and Mississippian age Coldwater, Ellsworth and Antrim Shales occur at least 150 feet below ground surface. They are not considered an important source of water due to their depth, low-yielding character, and the occurrence of better yielding aquifers in the overlying glacial drift (Indiana DNR Division of Water 2013).

The glacial aquifer system is the uppermost, and most widespread, source of groundwater in the region. The aquifer consists of unconsolidated sediment deposited during the Wisconsin Glacial period. These deposits consist of permeable bodies of sand and gravel that receive, store, transmit and discharge groundwater.



Source: St. Joseph County GIS Department

Figure 3.3-1
South Bend Site Watershed Divide

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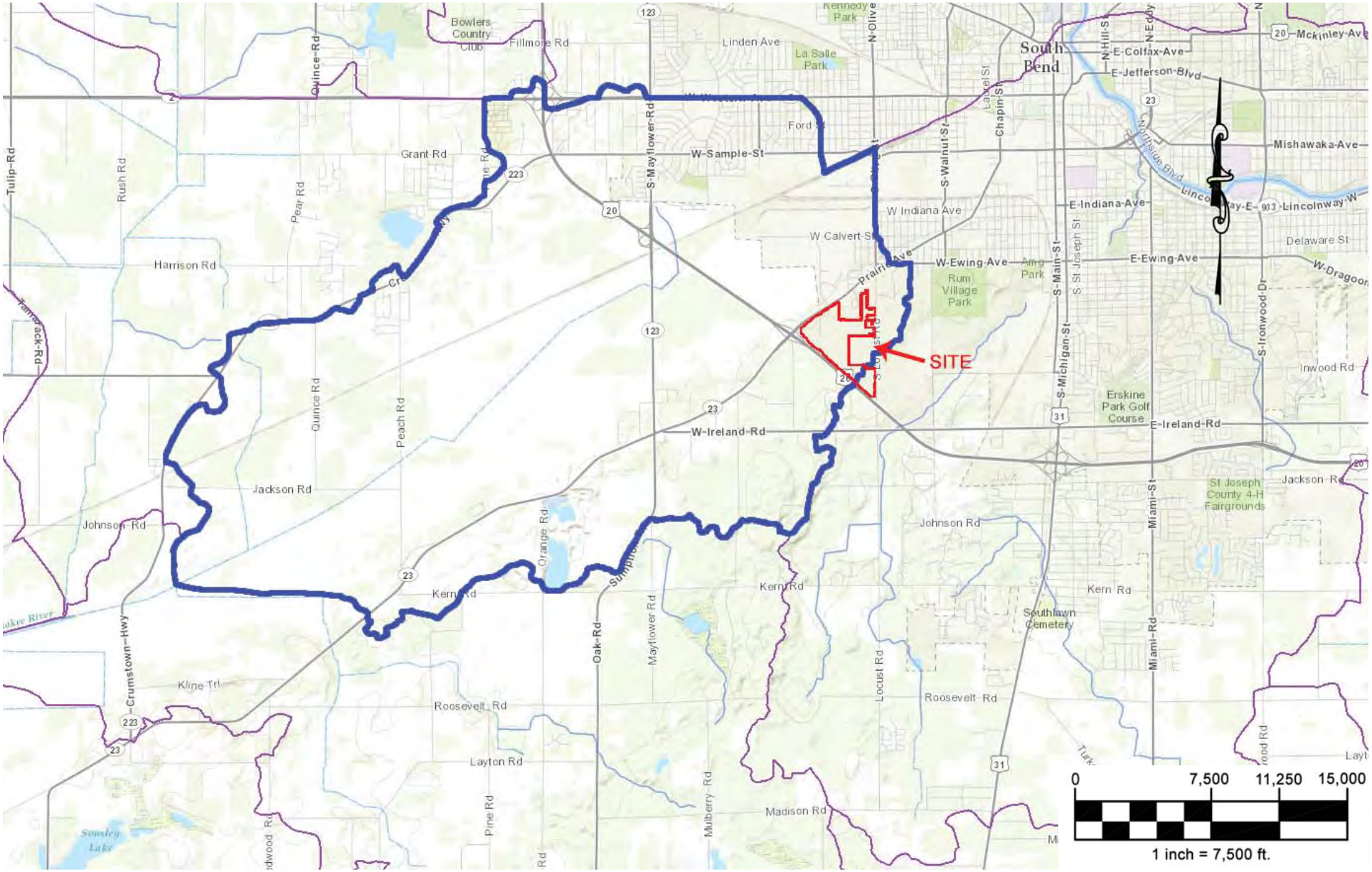

Source: United States Environmental Protection Agency

Figure 3.3-2

Dixon West - Place Ditch Subwatershed of the Kankakee River Watershed

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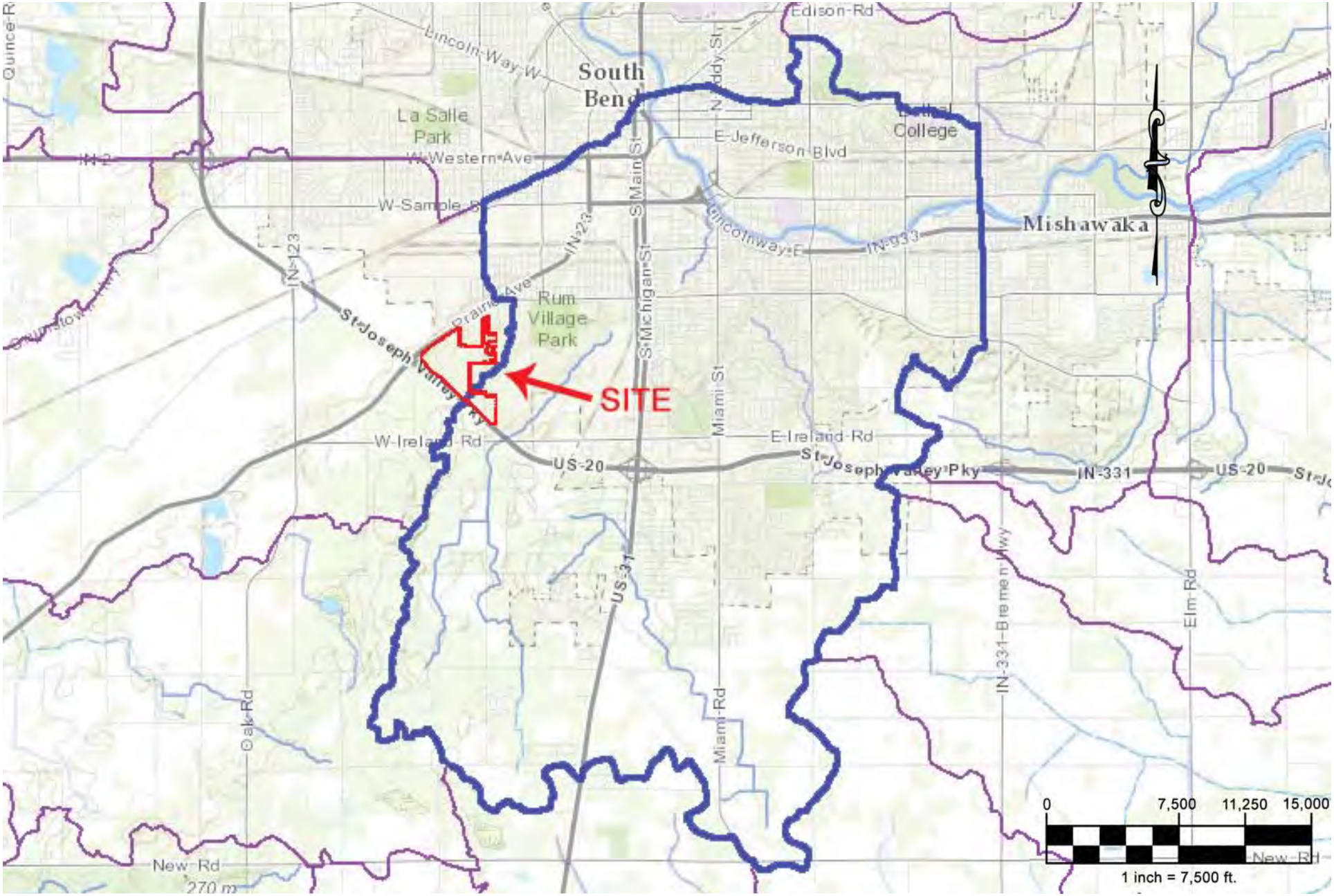

Source: United States Environmental Protection Agency

Figure 3.3-3

Auten Ditch Subwatershed of the St. Joseph River Watershed

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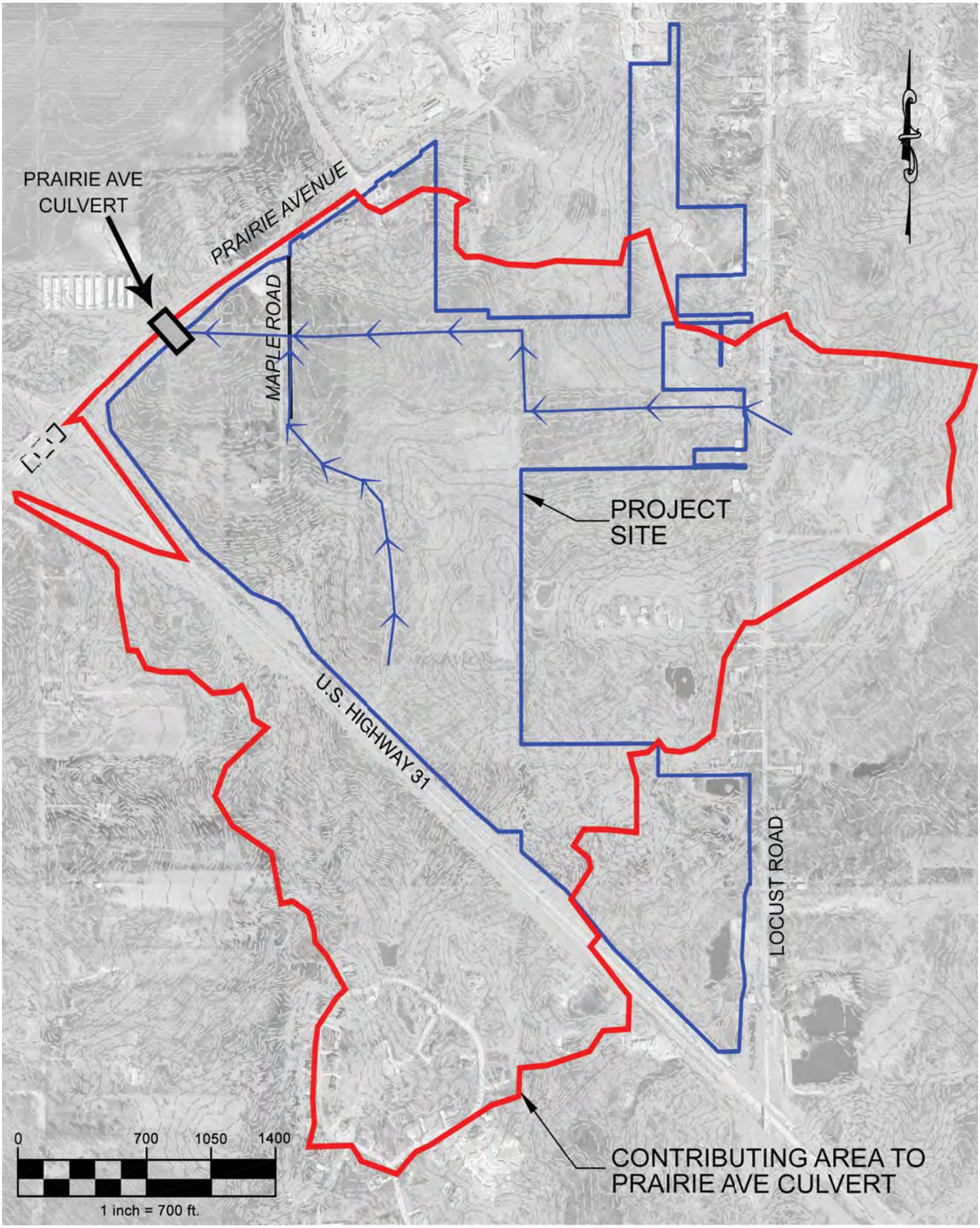

Source: St. Joseph County GIS Department

Pokagon South Bend EIS / January 2013

Figure 3.3-4
South Bend Site Drainage

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The glacial sediments beneath the project site consist of glacial till (complex mixture of primarily clay with minor amounts of sand and gravel) capping sandier deposits. The glacial till contains thin sand and gravel deposits that commonly contain perched groundwater. These layers of perched water ultimately drain to the principle aquifer beneath the site, the Maxinkuckee Moraine Aquifer (**Figure 3.3-8**). The Maxinkuckee Moraine Aquifer stretches to the southwest to cover the southwestern quadrant of St. Joseph County and most of the western half of Marshall County, which is located south of St. Joseph County (Indiana DNR Division of Water 2013).

The Maxinkuckee Moraine Aquifer System is a complex mixture of thin intratill sand and gravel units within a thick glacial till deposit. Most of the aquifers in this aquifer system are between three and 35 feet high. Water supply well depths range from 26 to 273 feet deep; however, most wells range from 50 to 150 feet deep. Static water levels range from zero to 90 feet, with most between 10 and 50 feet below ground surface. Well yields range from four to 80 gallons per minute (gpm). This aquifer system is moderately to highly susceptible to surface contamination (Indiana DNR Division of Water 2013).

The project site is located on a watershed and subsequent groundwater divide (**Figure 3.3-1**). Groundwater beneath a majority of the site flows westerly to the Kankakee River and ultimately to the Gulf of Mexico. Groundwater beneath the southeastern portion of the site in the Nappanee Aquifer flows to the St. Joseph River and ultimately to Lake Michigan, based on a review of topographic maps for the area (USDOI 2005).

The Nappanee Aquifer underlies the extreme southeastern tip of the project area. The Nappanee Aquifer System is composed of interbedded medium to coarse sands and gravels contained within a thick glacial till sequence. The individual layers of sand and gravel range from three to 20 feet thick. Individual layers thicken locally to 30 feet or more. This aquifer system covers southeastern St. Joseph County and the adjacent Elkhart County. This aquifer is anticipated to yield between 30 to 1,300 gpm. Excluding areas where surface sand and gravel are present, the aquifer is only moderately susceptible to surface contamination (Indiana DNR Division of Water 2013).

3.3.1.3 Water Quality

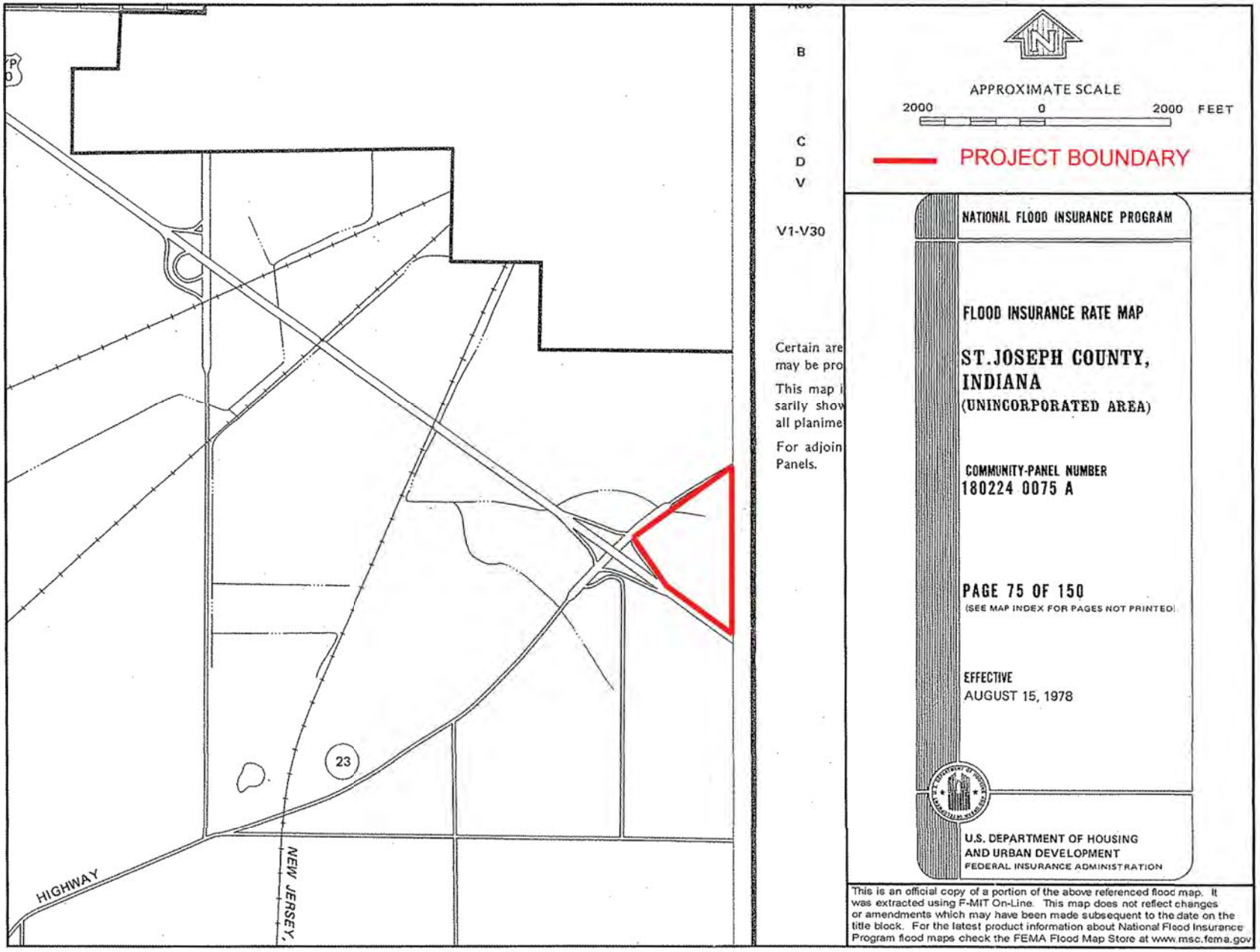
Surface Water Quality

The surface water conveyances on the project site are intermittent and influenced by precipitation. The drainage area contributing to the surface water runoff on the project site is minimal. The project site is predominantly undeveloped with a combination of fallow farm fields and woodlands. Surface water from the proposed development on the project site drains to two watersheds as previously shown in **Figure 3.3-1**.

The Indiana Department of Environmental Management (IDEM) develops an Integrated Water Monitoring and Assessment Report every two years to fulfill the requirements of Sections 305(b) and 303(d) of the Federal Clean Water Act. Section 305(b) of the CWA requires IDEM to assess and report on whether Indiana waters support the beneficial uses designated in Indiana's water quality standards. Section 303(d) requires IDEM to identify impaired waters that do not meet applicable water quality standards, or for which one or more of the designated uses are threatened. Each waterbody is assigned to a category based on the following criteria:

- Category 1: The waterbody is fully supporting all of its designated uses and none of its uses are threatened.
- Category 2: The waterbody is fully supporting the designated use assessed and no other use is threatened; insufficient data and information are available to determine whether the remaining uses are supported or threatened.
- Category 3: Insufficient data and information are available to determine whether the waterbody is supporting its designated use.
- Category 4: The designated use is impaired or threatened but a total maximum daily load (TMDL) is not required because:
    - A TMDL has already been completed for the impairment(s) and approved by U.S. EPA and is expected to result in attainment of all applicable water quality standards;
    - Other pollution control requirements are reasonably expected to result in the attainment of the water quality standard in a reasonable period of time; and/or,
    - Impairment is not caused by a pollutant.
- Category 5: The designated use is impaired, and a Total Maximum Daily Loads is required because:
    - The aquatic life use, recreational use, or drinking water use is impaired or threatened by one or more pollutant;
    - The "fishable use" of the waterbody is impaired; and/or,
    - The concentration of mercury or polychlorinated biphenyls (PCBs) in the edible tissue of fish collected from the waterbody exceeds Indiana's human health criteria for these contaminants.

Impaired waterbodies are required to undergo a planning process designed to reduce the amount of the pollutant(s) for which it is listed from both point and nonpoint sources of pollution. This process is called TMDL. IDEM defines a TMDL as "a process that leads to quantification of the amount of a specific pollutant discharged into a waterbody that can be assimilated and still meet the water quality standards (designated uses)."



Source: Federal Emergency Management Agency

Figure 3.3-5
South Bend Site Floodplain Map West

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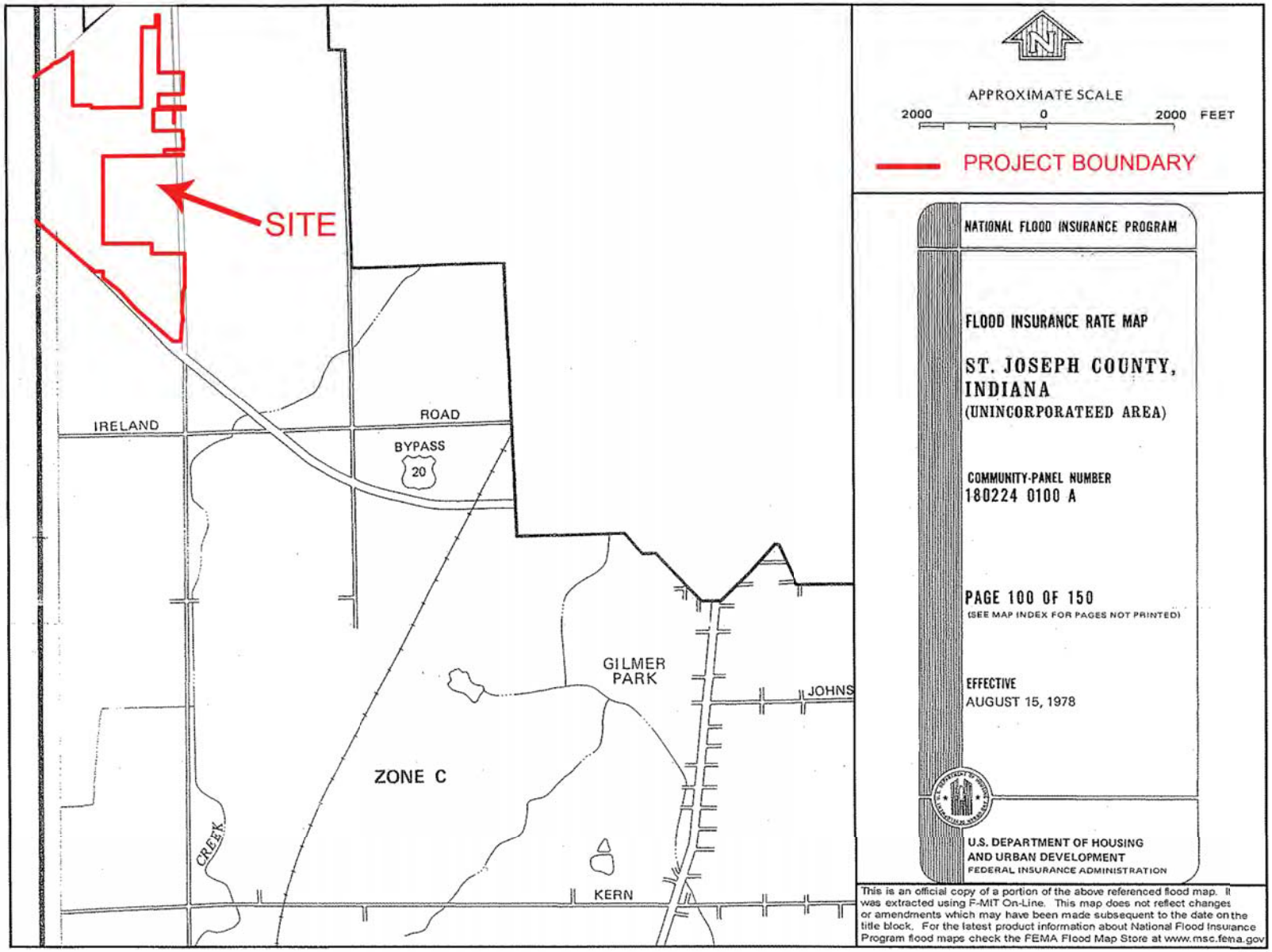

Source: Federal Emergency Management Agency

Figure 3.3-6
South Bend Site Floodplain Map East

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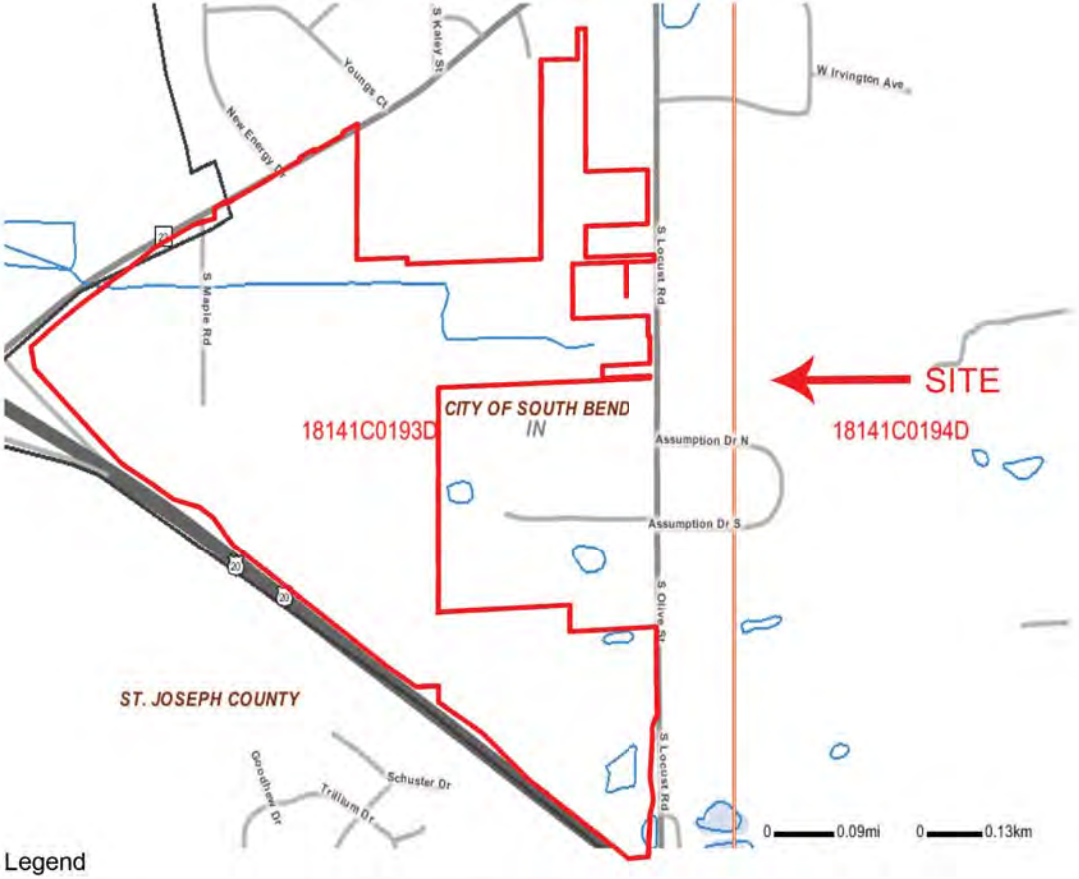

Source: Federal Emergency Management Agency

Figure 3.3-7
South Bend Site Floodplain Map Full Site

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IDEM conducted a comprehensive survey of the Kankakee/Iroquois River Watershed in 2008, in coordination with Region 5 U.S. EPA and the Illinois U.S. EPA. Portions of the Kankakee River were listed as impaired for *Escherichia coli* bacteria (*E. coli*), impaired biotic communities (IBC), and PCBs in fish tissue. See Table 3.3-3 for a description of the impairments. The EPA approved the TMDL for *E. coli* on September 29, 2009. A comprehensive survey of the St. Joseph River Watershed was conducted by IDEM in 2000. Portions of the St. Joseph River were listed as impaired for *E. coli* bacteria, and mercury and PCBs in fish tissue. The EPA approved the TMDL for *E. coli* on July 21, 2004.

Table 3.3-3
Description of Impairments

Impairment: Description	Source
Escherichia coli (*E. coli****)***: *E. coli* is a bacteria present in the feces of warm-blooded animals. *E. coli* in surface waters can lead to illness in humans. IDEM monitors *E. coli* in surface waters to determine whether the waterbody supports swimming and other recreational uses. An *E. coli* listing on Indiana's 303(d) list means IDEM's monitoring data shows the concentrations of *E. coli* are in excess of the Water Quality Standards.	Potential sources of *E. coli* and fecal coliform bacteria in the watershed include regulated point sources such as wastewater treatment plants, concentrated animal feeding operations, storm water runoff from Municipal Separate Storm Sewer Systems (MS4s); and illicitly connected "straight pipe" discharges of household waste.
IBC: The biological communities including fish and aquatic invertebrates, such as insects, in stream are indicators of the cumulative effects of activities that affect water quality conditions over time. An IBC listing on Indiana's 303(d) list, means IDEM's monitoring data show one or both of the aquatic communities are not as healthy as they should be.	IBC is not a source of impairment but a symptom of other sources.
Polychlorinated biphenyls (PCBs): Aquatic organisms in the natural environment obtain their PCB burden from both water and food which has been contaminated via water and air deposition. The guidelines for PCBs in fish and sediment are used for the assessment of existing water quality. PCB listings on Indiana's 303(d) list means IDEM's monitoring data shows the concentrations of PCB in fish tissue exceeds the level for healthy aquatic communities and human consumption.	PCBs entered the environment through unregulated disposal of products such as waste oils, transformers, capacitors, sealants, paints, and carbonless copy paper. In 1977, production of PCBs in North America was halted. Subsequently, the PCB contamination present in our surface waters and environment today is the result of historical waste disposal practices.
Mercury: Mercury, primarily methyl mercury, is quickly accumulated by aquatic biota. Mercury accumulation by organisms has resulted in adverse effects ranging from sub-lethal effects to deaths. Mercury listings on Indiana's 303(d) list means IDEM's monitoring data show the concentrations of mercury in fish tissue exceeds the level for healthy aquatic communities and human consumption.	The source of the mercury is unclear; however, atmospheric sources are suspected.

Once a TMDL has been developed, water quality-based discharge limits in National Pollutant Discharge Elimination System permits authorized under CWA Section 402 must be consistent with the assumptions and requirements of the wasteload allocation. The EPA is responsible for regulating discharges to surface waters. The EPA has delegated permitting authority to some states; however, the EPA regulates discharges originating on Tribal lands into receiving waters. Under the

Federal Clean Water Act, Indian Tribes can be treated as states for the purposes of the NPDES program (USGPO 2011).

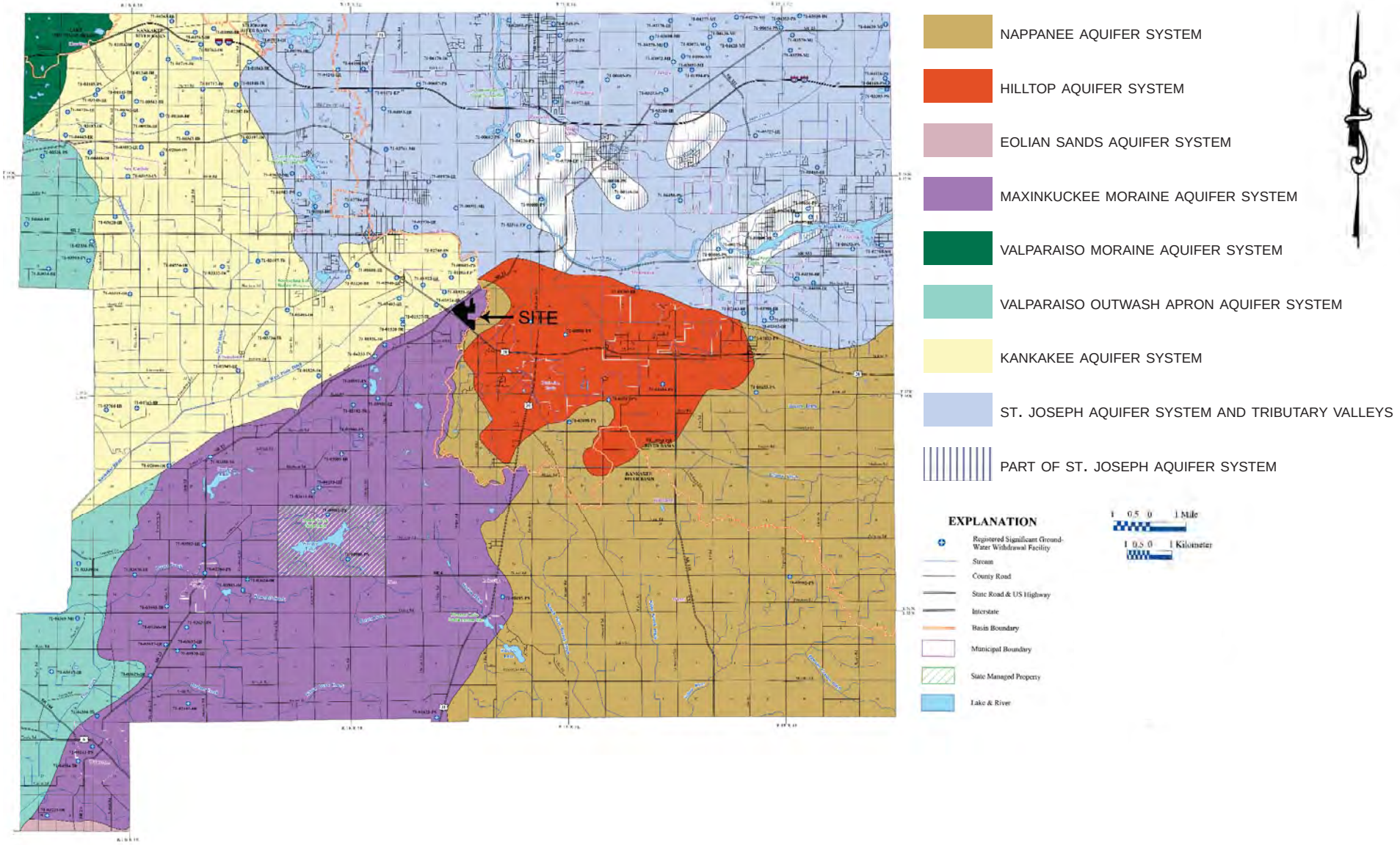
Groundwater Quality

The Safe Drinking Water Act defines National Primary Drinking Water Regulations as promulgated by the EPA. These are legally enforceable standards that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The EPA also defines National Secondary Drinking Water Regulations. These secondary standards are not enforceable. They regulate contaminants that cause cosmetic or aesthetic effects. EPA recommends these standards to water systems, but does not require systems to comply. Both primary and secondary drinking water standards are defined as either Maximum Contaminant Levels (MCL) which are the highest level allowed in drinking water, or Maximum Contaminant Level Goals (MCLG) which are the level of contaminant below which there is no known or expected risk to health.

In general, the quality of the groundwater in the project area is suitable for most domestic, commercial and industrial uses. Groundwater in the Maxinkuckee Aquifer is primarily a calcium bicarbonate type and is characterized by high alkalinities, high hardness and mostly basic pH. Alkalinity (the capacity of water to neutralize acid) is mainly produced by bicarbonate and commonly exceeds 300 mg/L (milligrams per liter). The high alkalinity in glacial moraine deposits may be caused by the long residence time of groundwater in low permeable glacial moraine deposits and the increased solution of carbonate minerals. Hardness is principally caused by calcium and magnesium, and the Maxinkuckee Aquifer generally has hard to very hard water, which is greater than 120 mg/L as calcium carbonate (Clendenon and Beaty 1990).

The natural groundwater quality in the project area is typically within regulation for public water supply. Available groundwater quality information for the area indicates that no MCL's are typically exceeded. However, MCLG's (secondary standards), are commonly exceeded by iron (MCLG of 0.3 mg/L) and manganese (MCLG of 0.05 mg/L).

Under the authority of Section 1424(e) of the Safe Drinking Water Act of 1974 (42 U.S.C. 300 et. seq.), the EPA has designated the St. Joseph Aquifer System a Principal or Sole Source Aquifer. A sole source aquifer is one that supplies at least 50 percent or more of the drinking water consumed in the area overlying the aquifer. These areas do not have reasonably available alternative source(s) of drinking water to supply those who depend on it. In order to protect drinking water supplies in these areas where alternative drinking water sources are rare or absent, the Sole Source Aquifer Protection Program mandates that projects that are to receive federal funding and have the potential to contaminate the sole source aquifer and create a significant hazard to public health, be reviewed and approved by the EPA (EPA 2012). The St. Joseph Sole Source Aquifer System underlies portions of both St. Joseph and Elkhart Counties (INDOT1989), including the South Bend



Source: Indiana Department of Natural Resources

Figure 3.3-8

Unconsolidated Aquifer Systems of St. Joseph County, Indiana

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and Elkhart project sites. The Sole Source Aquifer Protection Program is authorized by Section 1424(e) of the Safe Drinking Water Act of 1974 (Public Law 93-523, 42 U.S.C. 300 et. seq.), stating that if a sole source aquifer designation is approved, proposed federal financially-assisted projects which have the potential to contaminate the aquifer are subject to EPA review, while proposed projects that are funded entirely by state, local, or private concerns are not subject to EPA review. Funding sources for the proposed action at South Bend have not yet been secured, but if the project is approved and federal funding is sought for any housing and other non-commercial development, the federal funding agency would initiate the EPA review process (William Spaulding, pers. comm.). At this point, the Band would provide all necessary information and documentation to the EPA for review.

3.3.2 Elkhart Site

3.3.2.1 Surface Water, Drainage, Flooding

The average annual precipitation for the City of Elkhart is 36.6 inches per year. The 100-year, 24-hour cumulative rainfall is 5.92 inches, and the 50-year, 24-hour storm total is 5.27 inches. Rainfall in Elkhart is heaviest in the months of June, July, and August (NOAA 2012).

Watershed

The project area is located within the 4,670 square mile St. Joseph River Watershed of the Great Lakes Region. Locally, the project area is within the Rogers Ditch – Baugo Creek Subwatershed (HUC 040500012104) which covers approximately 19.5 square miles (**Figure 3.3-9**).

A small water conveyance illustrated in **Figure 3.3-10** is present on the project site that drains storm water from the east side of the project site to the west where it exits the site via a single 12-inch corrugated metal culvert beneath Nappanee Street. Before reaching the west side of the project site, water in the conveyance also passes under a gravel drive near the center of the site via two 12-inch diameter concrete culverts. The roadway is part of an easement owned by Indiana Michigan Power Company. The conveyance is moderately vegetated and traverses through an agricultural field on the project site. Another water conveyance enters in the southeastern corner of the site and discharges to the southwest of the site to Nappanee Street. After exiting the project site, storm water flows westerly within the St. Joseph River Watershed, ultimately discharging into Lake Michigan.

Surface Water Modeling

Storm water runoff flows westerly across the Elkhart project site, discharging through culverts under Nappanee Street. There is a topographic division on the site, causing storm water runoff on the northern portion of the site to flow to a culvert approximately 900 feet south of County Road 26, and storm water runoff from the southern portion of the site to flow to a culvert approximately 300 feet south of the southern property boundary. All of the storm water runoff directed to the

north culvert originates on the project site. The majority of the runoff directed to the southern culvert originates off site.

The existing conditions peak storm water discharge rates from the project site were calculated using Hydroflow software. The existing conditions land use characteristics are consistent with the woodland forest designation as defined by NRCS existing on Hydrologic Soil Group C soils (USDA NRCS 2013). The combination of soil group and land use type determines the Curve Number used in the NRCS Runoff Curve Number Method for hydrologic modeling calculations. The calculated pre-settlement storm water discharges for the areas are listed below in Table 3.3-4. The variables used to model the watersheds and calculate the storm water peak discharge rates are detailed in Table 3.3-5.

Table 3.3-4
Existing On-Site Discharge During 100-Year, 24-Hour Storm Event

Discharge Location	Tributary Drainage Area (acres)	Existing Peak Runoff (cfs)
North Culvert	111	123
South Culvert	59	65

cfs – cubic feet per second

Table 3.3-5
Proposed Watershed Variables Modeled

Tributary Label	Area (acres)	Curve Number	Time of Concentration (min)
North	111	70	89
South	59	70	89

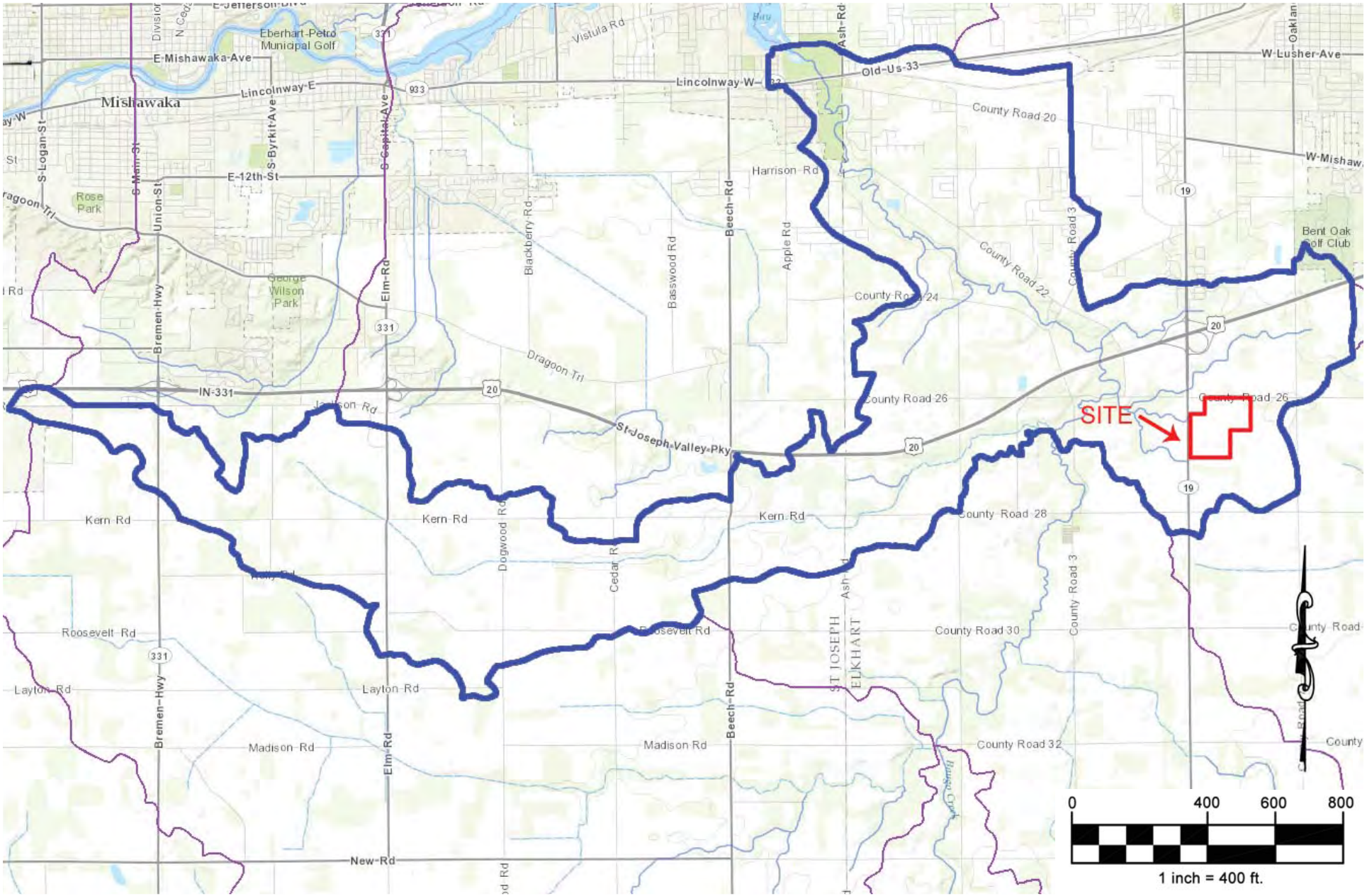
It is important to note that drainage from tributary areas outside of the project site is based on current development densities. Changes in land use characteristics from these areas are the responsibility of each upstream land developer or user.

Floodplain

As shown in **Figure 3.3-11** and **Figure 3.3-12**, the project area is not located in a floodplain as mapped and shown by the FEMA Flood Insurance Rate Map.

3.3.2.2 Groundwater

Significant quantities of groundwater are stored in unconsolidated glacial deposits that underlie the project site. These deposits supply water that can be used for nearly any purpose, often requiring little to no treatment. The bedrock underlying the project area includes layered Paleozoic-aged rocks consisting of limestone, dolomite, sandstone, siltstone and shale deposited by ancient seas.



Pokagon South Bend EIS / January 2013

Source: United States Environmental Protection Agency

Figure 3.3-9

Rogers Ditch - Baugo Creek Subwatershed of the St. Joseph River Watershed

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They are located at least 150 feet below ground surface and are not considered an important source of water due to their depth, low-yielding character, and the occurrence of better yielding aquifers in the overlying glacial drift (Indiana DNR Division of Water 2013).

The glacial aquifer system is the uppermost and most widespread source of groundwater in the region. The aquifer consists of unconsolidated sediment deposited during the Wisconsin Glacial period. These deposits consist of permeable bodies of sand and gravel that receive, store, transmit and discharge groundwater.

The glacial sediments beneath the project site consist of glacial till (complex mixture of primarily clay with minor amounts of sand and gravel). The glacial till contains thin sand and gravel deposits that contain groundwater. The principal aquifer beneath the site is the Nappanee Aquifer System (**Figure 3.3-13**). This aquifer is composed of interbedded medium to coarse sand and gravel zones contained within a thick glacial till sequence. The Nappanee Aquifer System typically is characterized by a surface clay till that often extends to depths of 80 or 90 feet, overlying a persistent three to 20 foot thick sand and gravel aquifer complex. The individual aquifers are typically clustered in a 25 to 30 foot vertical section within the till sequence. This clustering of aquifers is common to this system which underlies extensive areas of western Elkhart and eastern St. Joseph counties. Individual aquifers can thicken locally to 30 feet or more, but seldom are more than one to two square miles in area. It is not uncommon to have two or more of the aquifer units at an approximate elevation of 750 feet. These units have yielded between 30 to 1,300 gpm. This system is moderately susceptible to contamination (Indiana DNR Division of Water 2013). The groundwater below the site flows generally in a north-northeasterly direction.

Water well records for wells in the immediate area show that well depths range from 59 to 170 feet. The soil logs identify clay deposits at the surface ranging from 20 to 100 feet thick. The logs also indicate that the predominant subsurface deposit is clay, with seams of water bearing sands and gravels that range in thickness from five to 15 feet thick. Static water levels range from 27 to 55 feet below ground surface (IDNR Division of Water 2013).

3.3.2.3 Water Quality

Surface Water Quality

The drainage features (or storm water conveyances) on the project site are intermittent and influenced by precipitation. The tributary area contributing to the surface water on the project site is minimal. All surface water from the project site drains to the St. Joseph River Watershed through Rogers Ditch-Baugo Creek as previously shown on **Figure 3.3-9**.

As previously mentioned, IDEM develops an Integrated Water Monitoring and Assessment Report every two years to fulfill the requirements of Sections 305(b) and 303(d) of the Federal Clean Water Act (CWA). Section 305(b) of the CWA requires IDEM to assess and report on whether

Indiana waters support the beneficial uses designated in Indiana's water quality standards. Section 303(d) requires IDEM to identify impaired waters that do not meet applicable water quality standards, or for which one or more designated uses are threatened. Each waterbody is assigned to a category based on the criteria previously defined in Section 3.3.1.3.

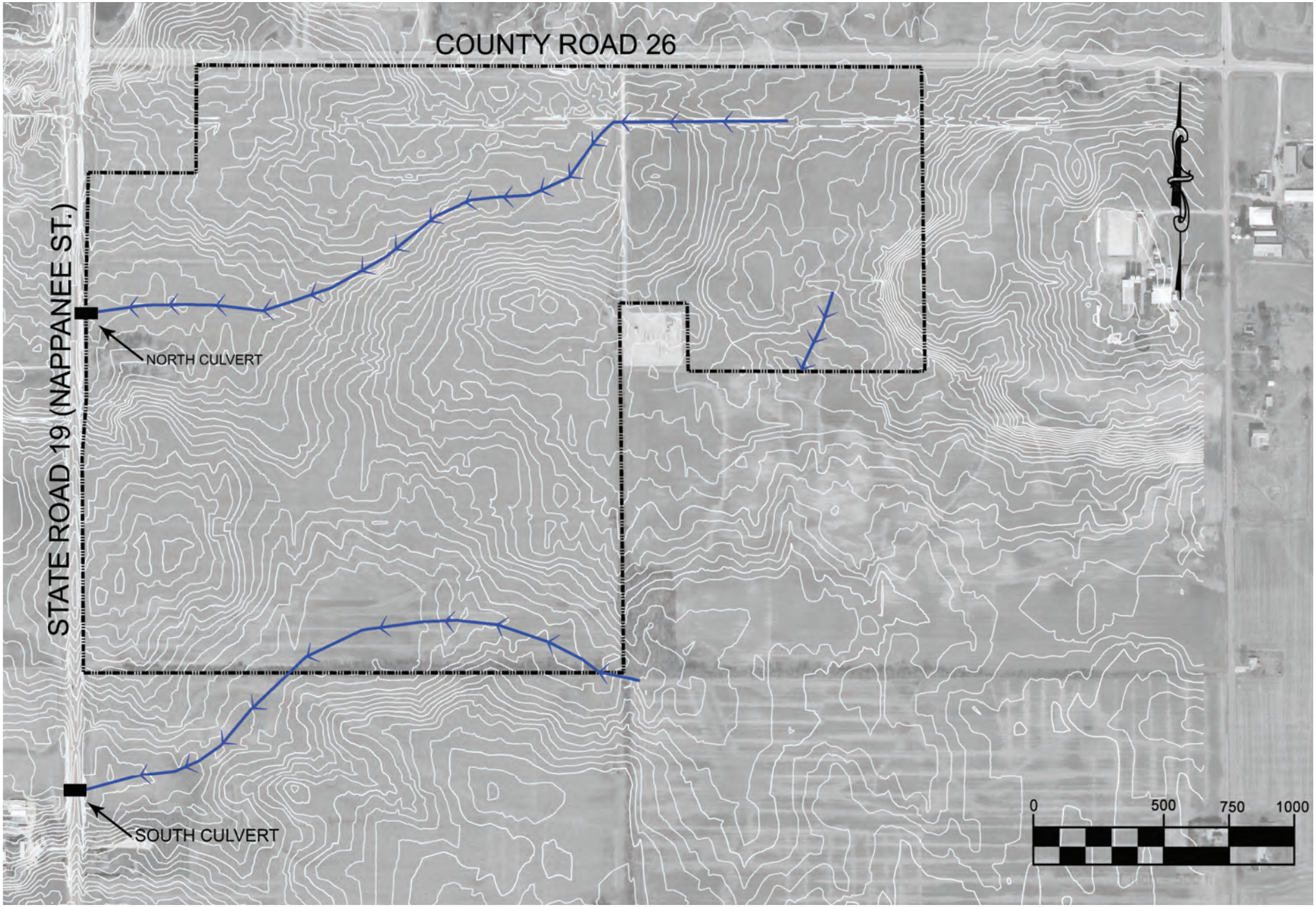
Impaired waterbodies are required to undergo a planning process designed to reduce the amount of the pollutant(s) for which it is listed from both point and nonpoint sources of pollution. This process is called TMDL. IDEM defines a TMDL as "a process that leads to quantification of the amount of a specific pollutant discharged into a waterbody that can be assimilated and still meet the water quality standards (designated uses)." A comprehensive survey of the St. Joseph River Watershed was conducted by the IDEM in 2000. Portions of the St. Joseph River were listed as impaired for *E. coli* bacteria, mercury and PCBs in fish tissue. A description of the impairments was previously presented in Table 3.3-3. The EPA approved the TMDL for *E. coli* on July 21, 2004 (USEPA 2009).

Once a TMDL has been developed, water quality-based discharge limits in National Pollutant Discharge Elimination System permits authorized under CWA Section 402 must be consistent with the assumptions and requirements of the wasteload allocation. The EPA is responsible for regulating discharges to surface waters. The EPA has delegated permitting authority to some states; however, the EPA regulates discharges originating on Tribal lands into receiving waters. Under the Federal Clean Water Act, Indian Tribes can be treated as states for the purposes of the NPDES program (USGPO 2011).

Groundwater Quality

The Safe Drinking Water Act defines National Primary Drinking Water Regulations as promulgated by the EPA. These are legally enforceable standards that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The EPA also defines National Secondary Drinking Water Regulations. These secondary standards are not enforceable, but regulate contaminants that cause cosmetic or aesthetic effects. EPA recommends these standards for water systems, but does not require systems to comply. Both primary and secondary drinking water standards are defined as either Maximum Contaminant Levels which are the highest level allowed in drinking water, or Maximum Contaminant Level Goals which are the level of contaminant below which there is no known or expected risk to health.

In general, the quality of the groundwater in the project area is suitable for most domestic, commercial and industrial uses. Groundwater in the Nappanee Aquifer System is primarily a calcium bicarbonate type and is characterized by high alkalinities, high hardness and mostly basic pH. Alkalinity (the capacity of water to neutralize acid) is mainly produced by bicarbonate and commonly exceeds 300 mg/L. Hardness is principally caused by calcium and magnesium, and the



Source: Elkhart County GIS

Figure 3.3-10
Elkhart Site Drainage

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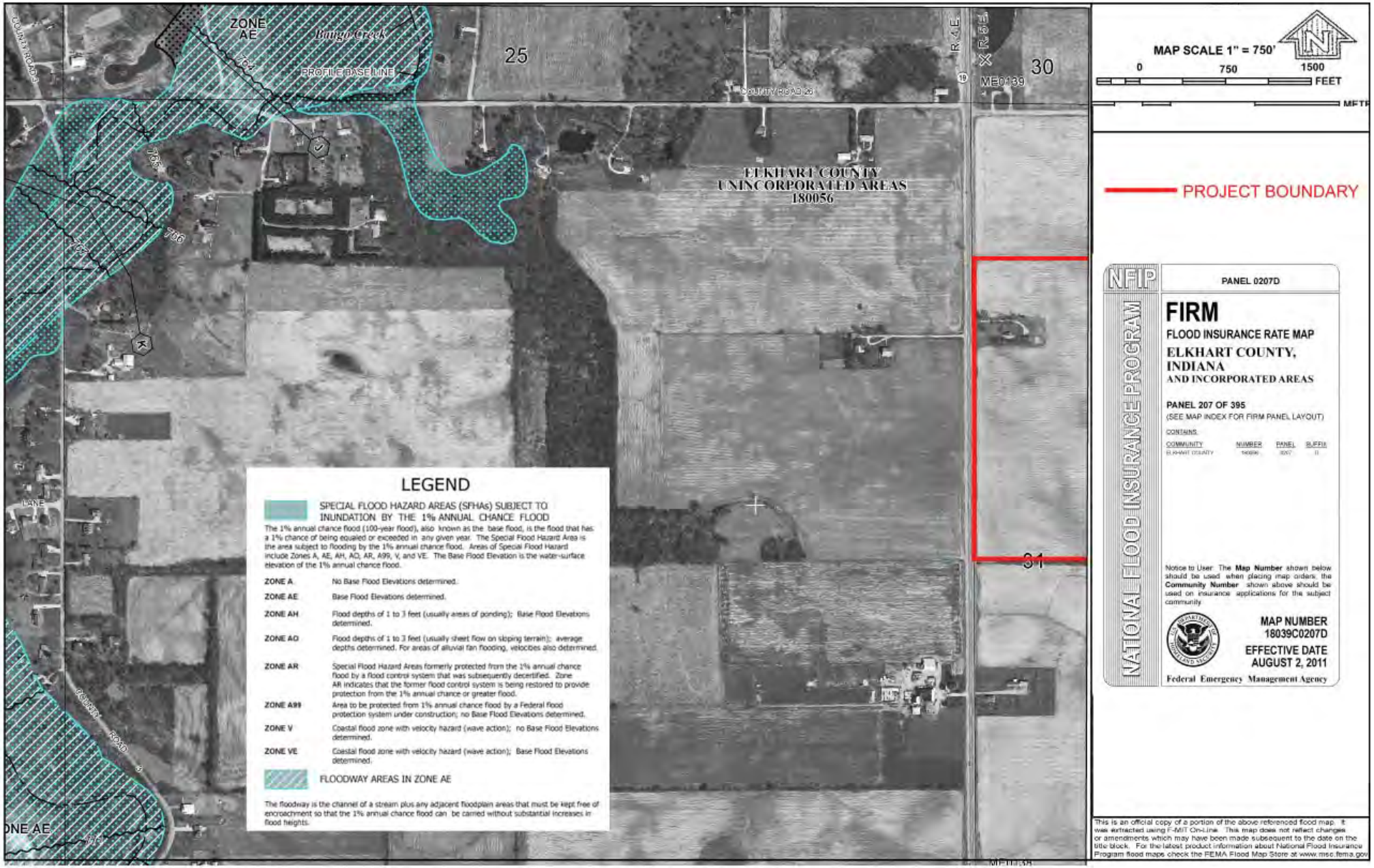

Source: Federal Emergency Management Agency

Figure 3.3-11
Elkhart Site Floodplain Map West

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Source: Federal Emergency Management Agency

Figure 3.3-12
Elkhart Site Floodplain Map East

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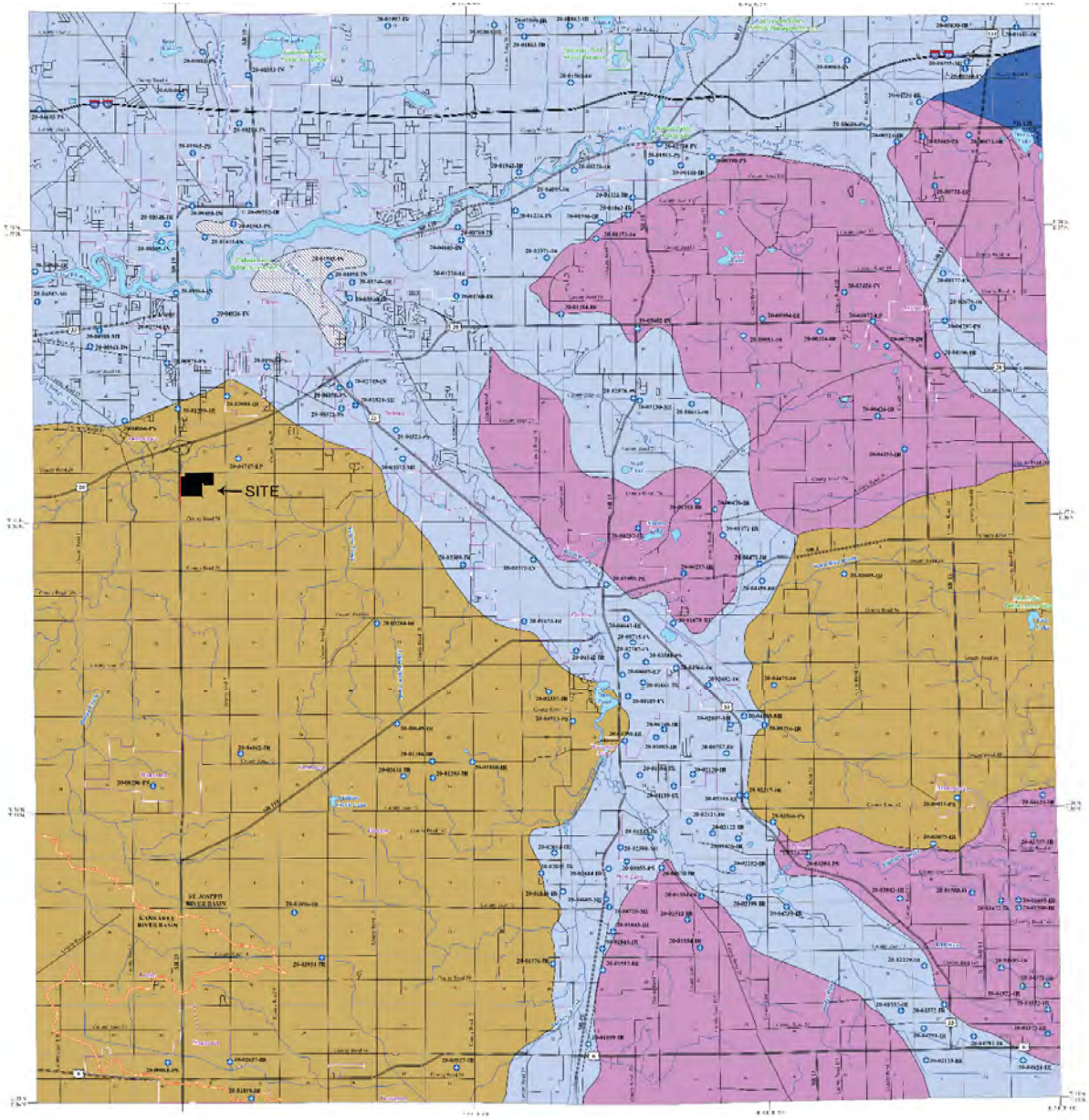

HOWE OUTWASH AQUIFER SYSTEM

NAPPANEE AQUIFER SYSTEM

NATURAL LAKES AND MORAINES AQUIFER SYSTEM

ST. JOSEPH AQUIFER SYSTEM AND TRIBUTARY VALLEYS

PART OF ST. JOSEPH AQUIFER SYSTEM

EXPLANATION

Registered Significant Ground-Water Withdrawal Facility

Stream

County Road

State Road & US Highway

Interstate

Basin Boundary

Municipal Boundary

State Managed Property

Lake & River

0.5 0 1 Mile

0.5 0 1 Kilometer

Source: Indiana Department of Natural Resources

Figure 3.3-13

Unconsolidated Aquifer Systems of Elkhart County, Indiana

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Nappanee Aquifer System typically has hard to very hard water, which is greater than 120 mg/L as calcium carbonate (Clendenon and Beaty 1987).

The natural groundwater quality in the project area is typically within regulation for public water supply; however, MCLG (recommended or secondary standards) for iron (0.3 mg/L) and manganese (0.05 mg/L) are commonly exceeded in wells in the Nappanee Aquifer. Concentrations of iron and manganese above the MCLG do not pose a health risk, but can cause staining of pipes and laundry. Total Dissolved Solids (TDS) is a measure of the concentration of mineral constituents dissolved in water, and wells in the Nappanee Aquifer commonly exceed the MCLG of 500 mg/L for TDS (Clendenon and Beaty 1987).

Please see description of St. Joseph Sole Source Aquifer System under the South Bend Site (Section 3.3.1.3), as the information outlined there is also applicable to the Elkhart Site. Similar to the South Bend site, if Alternative B is approved and federal funding is sought for any housing and other non-commercial development at the Elkhart site, the federal funding agency would initiate the EPA review process (William Spaulding, pers. comm.). At this point, the Band would provide all necessary information and documentation to the EPA for review.

3.4 AIR QUALITY

The United States Environmental Protection Agency is required under the Clean Air Act to assign a designation of each area of the United States regarding compliance with the National Ambient Air Quality Standards (NAAQS). The EPA office of Air Quality Planning and Standards is responsible for establishing NAAQS for pollutants considered harmful to public health and the environment (42 U.S.C. § 7409(b)). The EPA established the General Conformity rule in Clean Air Act which requires a General Conformity determination is made for all federal actions in nonattainment or maintenance areas where the total of direct and indirect emissions of a nonattainment pollutant or its precursors exceeds thresholds established by the regulations.

3.4.1 Regional Information

The Preferred Alternative (Alternative A) project site is located in South Bend, Indiana, in St. Joseph County. The Alternate site is located in Elkhart County, Indiana. St. Joseph County and Elkhart County are part of the South Bend-Elkhart (Indiana)-Benton Harbor (Michigan) Interstate Air Quality Control Region. This region includes the following counties in Indiana: Elkhart, Kosciusko, La Porte, Marshall, and St. Joseph. In the State of Michigan, this region includes: Berrien, Cass, and Van Buren Counties. For the purposes of an air quality analysis of the project alternatives, existing air quality conditions for the South Bend-Elkhart Area were used as a baseline for comparison because air quality is more of a regional issue than a localized one.

3.4.2 Regulatory Context

The Clean Air Act, which was last amended in 1990, established two types of national air quality standards. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation and buildings. These standards apply to the concentration of a specified pollutant in outdoor air.

The Clean Air Act also includes specific provisions for tracking air quality in Indian country, known as the Tribal New Source Review (NSR). Specifically, the regulation includes a Minor NSR program that applies to new minor sources, and/or minor modifications at both major and minor sources, in both attainment and nonattainment areas (EPA 2012a). Any new development on reservation or tribal trust land is required to either register their source and levels of pollution with the EPA or apply for a permit before building the proposed facility, if the facility's proposed emissions are at or above any of the thresholds included in this rule. The EPA office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called "criteria" pollutants. They are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), particulate matter with particle diameters of 10 microns or less (PM_{10}), particulate matter with diameters of 2.5 microns or less ($PM_{2.5}$) and sulfur dioxide (SO_2). These pollutants are summarized in **Table 3.4-1**.

Table 3.4-1
National Ambient Air Quality Standards

Air Constituent	NAAQS Primary/Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)	primary	8-hour	9 ppm	Not to be exceeded more than once per year
	primary	1-hour	35 ppm	Not to be exceeded more than once per year
Lead (Pb)	primary and secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
Nitrogen Dioxide (NO_2)	primary	1-hour	100 ppb	98th percentile, averaged over 3 years
	primary and secondary	Annual	53 ppb	Annual Mean
Ozone (O_3)	primary and secondary	8-hour	0.075 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution $PM_{2.5}$	primary	Annual	12 µg/m^3	annual mean, averaged over 3 years
	secondary	Annual	15 µg/m^3	annual mean, averaged over 3 years
	primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
Particle Pollution PM_{10}	primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)	primary	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years

Air Constituent	NAAQS Primary/Secondary	Averaging Time	Level	Form
	secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Source: EPA 2013a

CO is a colorless, odorless, tasteless gas that is created when fuel does not burn completely. It may temporarily accumulate at harmful levels, especially in calm weather during winter and early spring, when fuel combustion reaches a peak and CO is chemically more stable due to the low temperatures. CO from natural sources usually dissipates quickly over a large area, posing no threat to human health. Transportation activities, indoor heating and open burning are among the anthropogenic (man-made), sources of CO.

Dominant industrial sources of lead emissions are primarily from industrial and combustion sources. The lead content of motor vehicle emissions, which was the major source of lead in the past, has significantly declined with the widespread use of unleaded fuel.

NO_2 is a reddish-brown, highly reactive gas that is formed in the ambient air through the oxidation of nitric oxide. NO_2, nitric oxide and nitrate radical (NO_3) are collectively called oxides of nitrogen (NO_x). These three species are interrelated, often changing from one form to another in chemical reactions. NO_2 is the species commonly measured in ambient air monitors. The principal man-made source of NO_x is fuel combustion in motor vehicles, power plants, boilers, etc. Reactions of NO_x with other atmospheric chemicals can lead to the formation of ozone and acidic precipitation.

Ozone is a gas that occurs naturally in the earth's upper atmosphere and at ground level. Ground level ozone is formed from photochemical reactions involving NO_x and VOCs (volatile organic compounds) or hydrocarbons in the presence of sunlight rather than being directly emitted by natural and human sources. Motor vehicle exhaust, industrial emissions and chemical solvents are the major sources of these chemicals. Elevated levels of ozone usually occur during the hot summer months as ultraviolet radiation from the sun initiates the photochemical reactions.

Ozone has the same chemical structure whether it occurs miles above the earth or at ground level and can be "good" or "bad," depending on its location in the atmosphere. "Good" ozone occurs naturally in the stratosphere approximately 10 to 30 miles above the earth's surface and forms a layer that protects life on earth from the sun's harmful rays. In the earth's lower atmosphere, ground-level ozone is considered "bad."

Ground-level ozone is of concern because it can trigger a variety of health problems even at very low levels, may cause permanent lung damage after long-term exposure and may cause damage to plants and ecosystems. Potential health problems include the following:

Ozone can irritate lung airways and cause inflammation much like sunburn. Other symptoms include wheezing, coughing, pain when taking a deep breath and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high.

- Repeated exposure to ozone pollution for several months may cause permanent lung damage. Anyone who spends time outdoors in the summer is at risk, particularly children and other people who are active outdoors.
- Even at very low levels, ground-level ozone triggers a variety of health problems including aggravated asthma, reduced lung capacity and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

Ground-level ozone also interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, other pollutants and harsh weather. It can also damage the leaves of trees and other plants, ruining the appearance of cities, national parks and recreation areas. Crop and forest yields can also be reduced by ozone and it increases plant vulnerability to disease, pests and harsh weather.

Under favorable weather conditions, the ozone precursors and the ground-level ozone itself can be transported hundreds of miles as ozone formation occurs. As a result, the long-range transport of air pollutants may impact the air quality of regions downwind from the actual area of formation.

Particulate pollution matter is a general term used for a mixture of solid particles and liquid droplets found in the air. Particulate matter is separated into two different sizes for purposes of the NAAQS; PM_{10} and $PM_{2.5}$. $PM_{2.5}$ is considered to be in the respirable range, meaning these particles can reach the alveolar region of the lungs and penetrate deeper than PM_{10}. There are many sources of particulate matter, both natural and man-made, including dust from construction activities, industrial activities and combustion of fuels.

SO_2 is a colorless gas formed by burning of sulfur-containing material. It is emitted from natural processes, such as volcanic activity, and by anthropogenic sources such as combustion of fuels containing sulfur and sulfuric acid manufacturing. SO_2 emissions in the atmosphere can lead to the formation of acidic precipitation (i.e., acid rain).

3.4.2.1 Compliance With the NAAQS-Area Designations

The Clean Air Act requires the EPA to assign a designation of each area of the United States regarding compliance with the NAAQS. If the air quality in a geographic area meets or does better than the NAAQS for a criteria pollutant, the area is called an attainment area. Areas that do not meet the standard are called nonattainment areas. The EPA categorizes the level of compliance or noncompliance as follows:

- Attainment – area currently meets the NAAQS

- Maintenance – area currently meets the NAAQS, but has previously been out of compliance
- Nonattainment – area currently does not meet the NAAQS

The Clean Air Act goes on to define a nonattainment area not only as an area that is exceeding the NAAQS, but one that may be contributing to an exceedance of a standard in a nearby area. For air quality monitoring and planning purposes, the EPA relies on the designation of nonattainment areas for air pollutants within the boundaries of geographical planning units starting with the larger Combined Statistical Areas and subdividing into Metropolitan Statistical Areas (MSAs). The MSAs are established based on population density and social and economic integration with adjacent counties. The EPA also considers other key factors, including air emissions monitoring data, traffic and commuting patterns and expected growth, in determining whether additional counties should be included in a MSA.

3.4.2.2 General Conformity

As required by the Clean Air Act, the EPA has also promulgated rules to ensure that federal actions conform to the appropriate State Implementation Plan (SIP). Two rules were promulgated: (1) the Transportation Conformity Rule and (2) the General Conformity Rule. The Transportation Conformity Rule applies to Federal Highway Administration/Federal Transit Authority projects within maintenance or nonattainment areas. The General Conformity Rule applies to federal actions, except Federal Highway Administration and Transit Authority actions, within maintenance or nonattainment areas.

The Clean Air Act, under 42 U.S.C. § 7506(c) (1), prohibits federal agencies from funding, permitting or licensing any project that does not conform to an applicable SIP. The purpose of the General Conformity Rule is to ensure that federal agencies consult with state and local air quality districts to assure these regulatory entities know about the expected impacts of the federal action and can include expected emissions in their SIP emissions budget. In addition, the conformity requirements were promulgated to ensure attainment and maintenance of the NAAQS and to ensure that federal actions will not cause or contribute to new violations of the NAAQS.

The EPA promulgated General Conformity regulations in 40 CFR Part 93 (EPA 1993). Pursuant to these regulations, a federal agency must make a General Conformity determination for all federal actions in nonattainment or maintenance areas where the total of direct and indirect emissions of a nonattainment pollutant or its precursors exceeds thresholds established by the regulations. A federal action is defined as any activity engaged in or supported in any way by any department, agency or instrumentality of the Federal government. Federal actions include providing Federal financial assistance or issuing a federal license, permit or approval. Where the federal action is a permit, license or other approval for a project, the activity that is considered a federal action is the portion of the project that requires the federal permit, license or approval.

3.4.2.3 Role of Indiana Department of Environmental Management

The role of the Indiana Department of Environmental Management Office of Air Quality is to assure that Indiana meets the NAAQS for each of the six criteria pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide) regulated by the federal Clean Air Act. The Office of Air Quality is comprised of the following five branches to handle the responsibility:

- Air Compliance and Enforcement Branch
- Air Monitoring Branch
- Air Operations Branch
- Air Permits Branch
- Air Programs Branch

3.4.3 Air Quality Baseline Condition

Ambient air quality in the project area is directly related to emissions from man-made sources such as from stationary sources (stacks, vents, etc.); emissions from mobile sources such as vehicles, ships, trains, etc.; chemical reactions in the atmosphere such as the formation of ozone; and natural sources such as trees, fires, and wind-blown dust. Since all of these sources must be considered in an assessment of air quality, the EPA has identified air emissions inventories and ambient air monitoring as key methods for assessing air quality.

Based on available air emissions inventory information provided in the EPA's public database, the following **Table 3.4-2** is a summary of emissions for the South Bend-Elkhart Area.

Table 3.4-2
Summary of South Bend-Elkhart Area Emissions Inventory (2008)

Air Contaminant	South Bend-Elkhart Area Emissions (tons per year [tpy])
VOC	56,395
PM_{10}	47,593
$PM_{2.5}$	10,606
CO	156,383
NOX	38,928
SO_2	18,202

Source: EPA 2013b

South Bend-Elkhart Area is designated as being in attainment or unclassifiable for all NAAQS and is subject to a maintenance plan for ozone. Under the Clean Air Act, states are required to develop a SIP to define the strategies for assessing and maintaining the NAAQS. The SIP sets emissions

budgets for point sources such as power plants and manufacturers; area sources such as dry cleaners and paint shops; off-road mobile sources such as boats and lawn mowers; and on-road sources such as cars, trucks, and motorcycles. The maintenance plan is part of the SIP that documents the control strategies to be put in place to ensure the area will continue to meet the NAAQS.

3.4.3.1 Federal Clean Air Act and Indian Tribes

The federal Clean Air Act authorizes EPA to issue regulations specifying the provisions of the Act for which Indian tribes may be treated in the same manner as states. For those provisions specified, a tribe may develop and implement one or more of its own air quality programs under the Act. EPA issued its final rule on this issue in 1998. The rule provides that tribes will be treated in the same manner as states for virtually all federal Clean Air Act programs. The rule grants tribes, with EPA-approved Clean Air Act programs, authority over all air resources within the exterior boundaries of a reservation (including non-Indian owned fee lands) and trust lands. No such program exists for the Pokagon Band of Potawatomi Indians; therefore, EPA retains permitting authority for sources of air pollution located on the South Bend project site.

3.5 BIOLOGICAL RESOURCES

Habitat type and vegetative community data is available for areas on a large scale because it is collected via satellite imagery. An example of this is the National Wetland Inventory data available via online. For this project vegetation and habitat data was collected by a qualified botanist on both the South Bend and Elkhart sites. Indiana Natural Heritage Data Center was utilized to gather information about Endangered, Threatened and Rare Species on both the South Bend and Elkhart property. The United States Fish and Wildlife Service is responsible for administering the Endangered Species Act, in particular Section 7(a)(2), which directs “interagency coordination,” otherwise known as Section 7 consultation. The Section 7 consultation process is initiated when any action the federal government carries out, funds, or authorizes may affect a listed endangered or threatened species (USFWS 2013). Wetlands within the state of Indiana are regulated both by the US Army Corp of Engineers (USACE) and by the Indiana Department of Environmental Management. As outlined in Section 3.5.6 below, a pre-application meeting was held with both of these agencies in January 2013. During this meeting a preliminary determination was made regarding which wetlands were under the jurisdiction of the USACE. It was also determined that if and when the property is taken into trust, IDEM would not have regulatory jurisdiction over the on-site wetlands.

3.5.1 Regional Setting

3.5.1.1 South Bend Site

This site is located within the headwaters of the Kankakee River and the St. Joseph River in northern Indiana at the northern edge of where a mostly rural area, with a mixture of agriculture, woodland and residential development, reaches the urbanized edge of the City of South Bend. The U.S. Environmental Protection Agency classifies this site as lying within the Level IV Elkhart Till Plains ecoregion of the larger Level III South Michigan/Northern Indiana Drift Plains ecoregion. The Level III ecoregion is described as being distinguished from adjacent ecoregions by a wider assortment of landforms, soil types, soil textures and land uses, within which is the Level IV ecoregion containing end moraines, kames and lacustrine flats previously dominated by oak-hickory and beech maple forests but now with agricultural use more extensive than forest cover. (USEPA 2012)

3.5.1.2 Elkhart Site

The Elkhart site is located within the St. Joseph River watershed in northern Indiana at the northern edge of a predominantly agricultural area approximately one and one-half mile south of the urbanizing edge outside the City of Elkhart. The U.S. Environmental Protection Agency classifies this site as lying within the Level IV Elkhart Till Plains ecoregion of the larger Level III South Michigan/Northern Indiana Drift Plains ecoregion (USEPA 2012), the same as the South Bend site and described above in 3.5.1.1.

3.5.2 Habitat Types Within the Project Area

3.5.2.1 South Bend Habitat Types Within the Project Area

This site contains habitat types ranging from the open water of several small ponds to mature upland forest. The most common habitat type is forest of varying age (young to mature woods) and covers approximately 78 acres or 47 percent of the site (Conservation Design Forum, Inc. 2011). The forest habitat occurs in the higher elevation area located around the perimeter of the property. Old field / meadow is the next most common habitat type with approximately 45 acres or 27 percent of the site. The meadow habitat is located in the areas that were previously agricultural lands (Conservation Design Forum, Inc. 2011). The remainder of the site is largely comprised of previous or existing residential use. An agricultural drain traverses the center of the site flowing from Locust Road on the east to where it passes under Prairie Avenue on the west. An ephemeral stream enters the site flowing north under US-31 where it enters a ditch along Maple Road and ultimately flows into the agricultural ditch.

3.5.2.2 Elkhart Habitat Types Within the Project Area

This site is in active agricultural row crop production with the exception of an approximately two-acre former home site along its western edge. Sparse hedgerows are present along the southern and eastern edges of the property and adjoin an approximately two-acre woodlot on adjacent property on the site's southern boundary. A narrow grassy swale intermittently transports surface water runoff from east to west across the northern portion of the property to a culvert under Nappanee Street.

3.5.3 Vegetative Types Within the Project Setting

3.5.3.1 South Bend Site

Prior to European settlement, vegetation in the general project area comprised oak savanna and prairie. Currently the site is comprised of regenerative cutover Oak-Hickory wood, shrub/tree, old field and Eurasian meadow, forested wetlands, fence row trees/shrubs, and homestead landscape all developed since disturbance and abandonment of agriculture, grazing and timbering. Review of aerial photographs indicates that the site has been cultivated from at least 1939 to about 2006.

Botanist investigated vegetative community types throughout the project site during 2011 on May 4, June 7, and September 20. Visits were made to determine the extent to which any plant communities were dominated by native vegetation remained. Assessment units were determined by dominance of plant communities for a given area. Four significant communities were assessed, of which two demonstrated a richness of plant diversity. Other than abandoned row crops, farming and grazing throughout the site, these native remnants vegetation units were limited to the southeast portion of the site along the southern boundaries of the site as visible on **Figure 3.5-1**. Refer to the Floristic Quality Assessment found in **Appendix D** for a description of each assessment unit and a comprehensive list of plant species.

Oak-Hickory Woods

Many of the wooded areas within the units inventoried and as described in the Floristic Quality Assessment found in **Appendix D** are either degraded or marginal young communities impacted from past human cultural practices. The canopies comprise mainly of hardwood species including sugar maple, red and black oak, white and red ash, black cherry, tulip tree and basswood.

Shrub/Tree

Many of these communities are either currently shrub and/or young aged wood comprised mostly of non-native invasive plant species and since they have been intensely tilled or pastured, they are not of native remnant quality. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species.

Old Field, Eurasian Meadow

A significant portion of the site has been either in tillage agriculture or intense pasture use therefore most of these Old Field and Eurasian Meadow units are dominated by Eurasian meadow species and are not of native remnant quality. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species.

Wetland and Pond

Most of the wetlands and ponds on site have been degraded by storm water runoff from adjacent roads and highway surface runoff or upstream flows off site. The quality could improve marginally if the wetland were to be burned annually, but dramatic improvements cannot occur until the storm water issues have been resolved. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species.

Hedgerow

These uncultivated strips of land within the project site are typically comprised of both invasive non-native and native trees and shrubs considered to be of low quality due to their aggressiveness in overtaking the plant community reducing overall species diversity. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species.

Homestead Landscape

These plant communities comprise mainly of ornamental non-native trees and shrubs along with cool season turf grasses; not of native provenance representing the local native ecology. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species. Plant species shown in uppercase are non-native to North America.

Table 3.5-1
Summary of Vegetative Types Within the Project Site

Vegetative Type	Acres	Percent Area
Oak - Hickory Woods	54.78	33.0
Shrub/Tree	23.40	14.1
Old Field, Eurasian Meadow	44.16	26.6
Wetland and Pond	2.26	1.4
Fence row trees/shrubs	15.35	9.3
Homestead landscape	25.86	15.6
Total	**165.81**	**100%**

Source: Conservation Design Forum, Inc. 2011

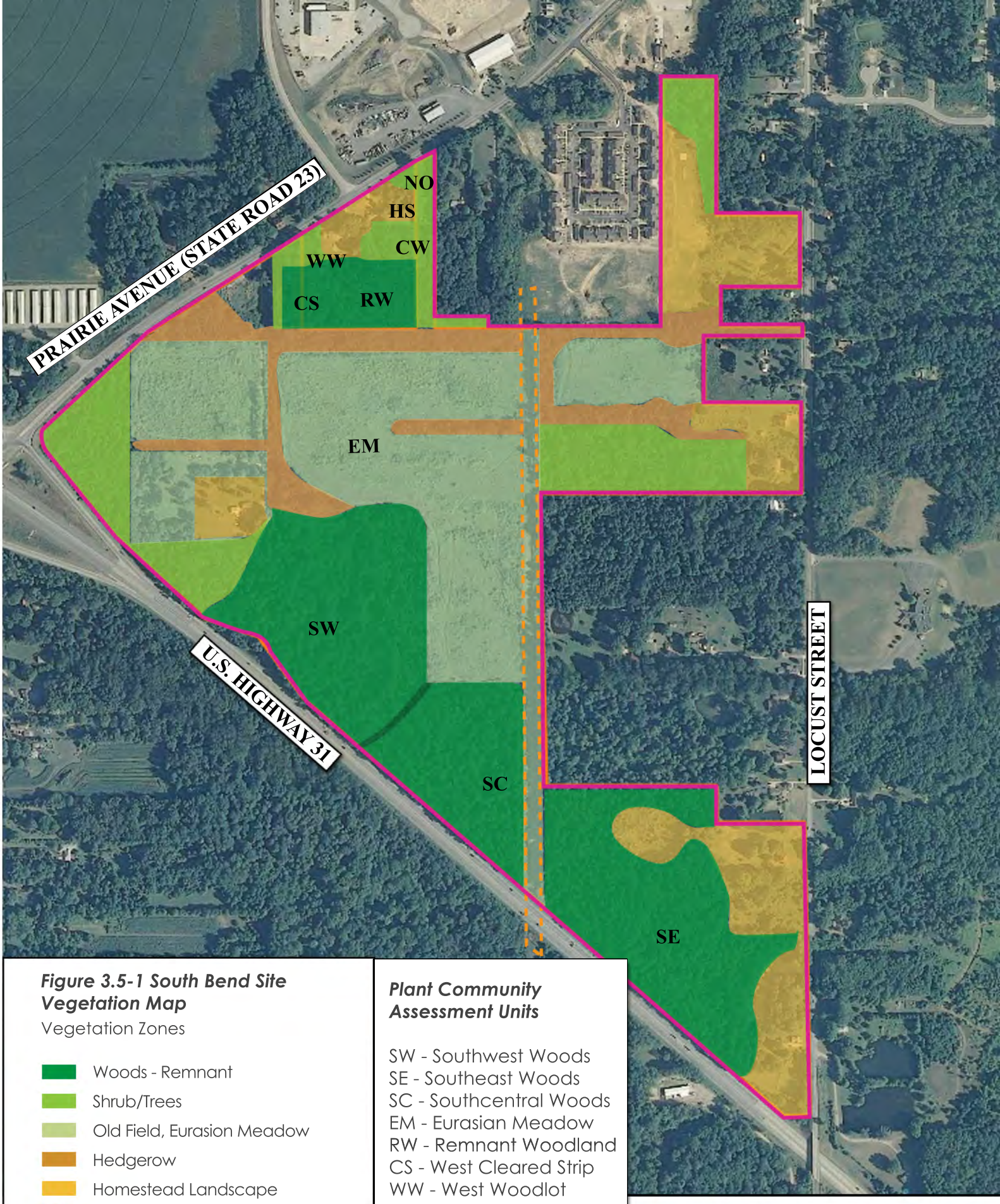

Figure 3.5-1 South Bend Site Vegetation Map

Vegetation Zones

- Woods - Remnant
- Shrub/Trees
- Old Field, Eurasion Meadow
- Hedgerow
- Homestead Landscape
- Utility Corridor - Managed Clearing
- Project Site Boundary

Plant Community Assessment Units

SW - Southwest Woods
SE - Southeast Woods
SC - Southcentral Woods
EM - Eurasian Meadow
RW - Remnant Woodland
CS - West Cleared Strip
WW - West Woodlot
HS - Homesites
CW - Central Woodlot
NW - North Woodlot

600' 300' 0' 600'

1 INCH = 600 FEET

N
W E
S

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FIGURE 3.5-2 ELKHART SITE VEGETATION MAP

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3.5.3.2 Elkhart Site

Prior to European settlement, vegetation in the general project area may have been comprised of oak savanna and prairie complexes. Currently, the site agricultural land is planted in annual row crops. Review of aerial photographs indicates that the site has been cultivated from early 1930's to the present.

A botanist investigated the vegetative community types throughout the project site in the fall of 2012. A visit was made to determine the extent to which any plant communities dominated by native vegetation remained. Only one visit was necessary due to the extent of disturbance from row crop farming practices. Assessment units were determined by dominance of plant communities for a given area. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species. Other than the annual row crops, vegetation is limited to tree fence rows along the property's far south and southeast boundary as visible on **Figure 3.5-2**.

Table 3.5-2
Summary of Habitat Types Within the Project Site

Vegetative Type	Acres	Percent Area
Annual Row Crops	167.5	97.5
Wooded fence hedgerow	2.39	1.4
Wetland	0.24	0.1
Homestead Landscape	1.69	1.0
Total	171.82	100%

Source: Conservation Design Forum, Inc. 2012

Wetland

The small wetland on site has been degraded by storm water runoff from the adjacent row crop farming. If adjacent agricultural practices continue such as herbicide application, constant soil disturbance from plowing and the changed hydrology from ditching, the wetland is not likely to revert back and will invite further establishment of invasive plant species.

Hedgerow

These uncultivated strips of land within the project site are typically comprised of both invasive non-native and native trees and shrubs considered to be of low quality due to their aggressiveness in overtaking the plant community reducing its overall species diversity. Row crop farming practices have also greatly affected the ability of this plant community to be diverse and rich.

Homestead Landscape

These plant communities comprise mainly of ornamental non-native trees and shrubs along with cool season turf grasses; not of native provenance. These plant communities comprise mainly of ornamental non-native trees and shrubs along with cool season turf grasses; not of native provenance representing the local native ecology. Refer to the Floristic Quality Assessment found in **Appendix D** for a complete list of plant species. Plant species shown in uppercase are non-native to North America.

3.5.4 Wildlife and Federally Listed Species

3.5.4.1 South Bend Wildlife and Federally Listed Species

Wildlife, for the purposes of this assessment, has been divided into the following groups: mammals, birds, reptiles and amphibians, and invertebrates. There are no impacts to rare or protected fish species onsite because there are no lakes or permanent streams.

Biologists investigated habitat types throughout the site during the fall of 2012. Vegetation throughout the site has been historically altered significantly from its pre-settlement state. The majority of the remnant woodlots consist primarily of young hardwood tree species with an ecologically degraded understory dominated by non-native shrubs. While no permanently flowing surface hydrology exists within the site, an ephemeral stream and constructed drain network exists. One remnant higher quality woodland community does occur within the southeast portion of the site. This remnant mesic upland forest on rolling topography is somewhat intact and has not been overrun by invasive species. During the spring of 2011, 88 native plant species were recorded with a high-quality mean coefficient of conservatism of 4.9 (Conservation Design Forum, Inc. 2011). In ecologically intact landscapes, highly diverse botanical communities can provide quality habitat structural components necessary for a rich, specialized faunal community. However, in a regional landscape context, factors that are typically associated with habitat fragmentation such as density of existing residential and urban development, roadways, and industrial agriculture, can often have important, overriding negative effects on animal diversity within any remnant natural community.

An Endangered, Threatened and Rare Species document from the Pokagon Sites Project Areas, St. Joseph and Elkhart Counties, Indiana list was obtained from the Indiana Natural Heritage Data Center (Indiana DNR 2012). The list includes previously documented high-quality natural communities and federally-listed species for the township within which the project site is located and the surrounding townships. In addition, comments were received through consultation undertaken with the U.S. Fish and Wildlife Service (USFWS 2013b) under Section 7 of the Endangered Species Act of 1973, as amended. Documents received from the Indiana DNR and the USFWS are included in **Appendix D**.

Mammals

No specific surveys were conducted for mammals within the site. Direct and indirect evidence of regionally common mammals such as white-tailed deer and gray squirrels was observed throughout the site. Other mammalian species common to rural / suburban interface areas that are likely to have access to the site for breeding and/or foraging include other squirrel species, raccoon, opossum, red fox, coyote, striped skunk, chipmunks, voles, moles, mice and bats.

No federally listed or candidate endangered or threatened species of mammals were included on the list received from the Indiana Natural Heritage Data Center, however, the site is within the range of the federally endangered Indiana bat (*Myotis sodalis*) (USFWS 2004).

Indiana bats are a migratory species that is known to typically hibernate in caves from mid-autumn until early spring. During the summer, they live in wooded or semi-wooded areas and forage for insects along river and lake shorelines, in the crowns of trees in floodplains and in upland forests. Their preferred roost sites during the summer are dead trees with loose bark or crevices which receive significant amounts of solar exposure during the day. They are also known to roost in human-made structures including bridges, sheds, houses and abandoned churches (USFWS 2004).

Though the site is located at what is essentially a dead end for northward migrating Indiana bats because of the City of South Bend, the upland forests of the site provide some potential habitat for Indiana bat. The available habitat is not ideal because of the region's fragmented landscape and lack of preferred forested riparian habitat. A site evaluation performed during the winter 2013 identified potential Indiana bat roost trees which are primarily located in the more mature wooded areas along US-31. No federally listed or candidate threatened or endangered mammal species have been observed on the site during on-site evaluations.

Birds

No species specific surveys were conducted for birds onsite. Regionally common birds such as American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), blue jay (*Cyanocitta cristata*), common starling (*Sturnus vulgaris*), white-breasted nuthatch (*Sitta carolinensis*), and tufted titmouse (*Baeolophus bicolor*), were seen and heard on the site during fall 2012 investigations within the site. Other songbird and raptor species common to the region likely have access to the site for nesting and foraging. Waterfowl habitat is largely limited to the several small ponds located along the eastern edge of the property.

No federally listed or candidate endangered or threatened species of birds were included on the list received from the Indiana Natural Heritage Data Center. No federally listed or candidate endangered or threatened species of birds were identified during consultation undertaken with the USFWS under Section 7 of the Endangered Species Act of 1973, as amended. No federally listed or

candidate threatened or endangered bird species have been observed on the site during on-site evaluations.

Reptiles and Amphibians

No specific surveys were conducted for reptiles and amphibians within the site. None were documented within the site during fall 2012 and winter 2013 ecological investigations. The several ponds in the western portion of the property provide breeding habitat for frog and toad species as well as habitat for some species of turtle.

The list received from the Indiana Natural Heritage Data Center included the federally threatened northern copperbelly water snake (*Nerodia erythrogaster neglecta*). USFWS correspondence stated that the site is within the range of the northern copperbelly water snake as well as the candidate eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*).

Northern copperbelly watersnakes are strongly associated with wetland habitats, and generally prefer shallow wetlands such as shrub swamps, emergent wetlands and temporary or permanent palustrine open water wetlands (Lee 2010). Eastern massasauga rattlesnakes live in wet areas including wet prairies, marshes and low areas along rivers and lakes (USFWS 2013).

3.5.4.2 Elkhart Wildlife and Federally Listed Species

Wildlife, for the purposes of this assessment, has been divided into the following groups: mammals, birds, reptiles and amphibians, and invertebrates. There are no impacts to rare or protected fish species onsite because there are no lakes or permanent streams.

Biologists investigated habitat types throughout the site during fall 2012. Vegetation throughout the site has been entirely altered significantly from its pre-settlement state for agricultural and residential use.

An Endangered, Threatened, and Rare Species Documented From the Pokagon Sites Project Areas, St. Joseph and Elkhart Counties, Indiana, list was obtained from the Indiana Natural Heritage Data Center (Indiana DNR 2012). The list includes previously documented high-quality natural communities and federally listed species for the township within which the project site is located and the surrounding townships. In addition, consultation was undertaken with the USFWS under Section 7 of the Endangered Species Act of 1973, as amended. Documents received from the Indiana DNR and the USFWS are included in **Appendix D.**

Mammals

No specific surveys were conducted for mammals within the site. Indirect evidence of only white-tailed deer was observed on the site. Other mammalian species common to rural/suburban interface areas that are likely to have access to the site include squirrel species, raccoon, opossum,

red fox, coyote, striped skunk, chipmunks, voles, moles, mice and bats, Given the largely agricultural condition of the property, wildlife use is likely limited to foraging or travel between other foraging and nesting sites.

No federally listed or candidate endangered or threatened species of mammals were included on the list received from the Indiana Natural Heritage Data Center, however, The site is within the range of the federally endangered Indiana bat (*Myotis sodalis*) (USFWS 2013).

The lack of wooded areas on the site, the surrounding agricultural use and the very limited amount of adjoining wooded habitats indicate it is highly unlikely this site is used in any fashion by Indiana bat.

No federally listed or candidate threatened or endangered mammal species have been observed on the site during on-site evaluations.

Birds

No specific surveys were conducted for birds onsite. Regionally common songbirds and raptor species common to the region likely have access to the site for roosting or foraging. Nesting habitat is largely limited to hedgerows. The lack of permanent or extended seasonal standing water limits waterfowl use though goose species likely feed in the agricultural fields following crop removal.

No federally listed or candidate endangered or threatened species of birds were included on the list received from the Indiana Natural Heritage Data Center. No federally listed or candidate endangered or threatened species of birds were identified during consultation undertaken with the USFWS under Section 7 of the Endangered Species Act of 1973, as amended. No federally listed or candidate threatened or endangered bird species have been observed on the site during on-site evaluations.

Reptiles and Amphibians

No specific surveys were conducted for reptiles and amphibians within the site. None were documented within the site during fall 2012 and winter 2013 ecological investigations. Agricultural use of the site and the lack of permanent or seasonal standing water provide almost no habitat for foraging or breeding by reptiles and amphibians.

The list received from the Indiana Natural Heritage Data Center included the federally threatened northern copperbelly water snake (*Nerodia erythrogaster neglecta*). USFWS correspondence stated that the site is within the range of the northern copperbelly water snake as well as the candidate eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*).

Northern copperbelly watersnakes are strongly associated with wetland habitats, and generally prefer shallow wetlands such as shrub swamps, emergent wetlands and temporary or permanent

palustrine open water wetlands (Lee 2010). Eastern massasauga rattlesnakes live in wet areas including wet prairies, marshes and low areas along rivers and lakes (USFWS 2013). This habitat type is not present on the Elkhart property.

3.5.4.3 Vegetative Communities

South Bend

The plant species inventory assessment found no known federally listed plant species within the project site based on review of the Indiana Natural Heritage Data Center list of County Endangered, Threatened and Rare Species List for St. Joseph County and biological field surveys. Additionally, no Indiana state-listed plant species were noted, nor are there any likely to persist there.

Elkhart

The plant species inventory assessment found no known federally listed plant species within the project site based on review of the Indiana Natural Heritage Data Center list of County Endangered, Threatened and Rare Species List for Elkhart County and biological field surveys. Additionally, no Indiana state-listed plant species were noted, nor are there any likely to persist there.

3.5.5 Wetlands and Waters of the U.S.

3.5.5.1 South Bend Wetlands and Waters of the U.S.

A wetland delineation was conducted during October 29-30, 2012 which identified 11.48 acres of wetlands. The methods used to conduct this wetland delineation were consistent with the procedures and general practices used by the U.S. Army *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2009). This determination included review of available information including the Web Soil Survey (NRCS 2012b) and the county list of hydric soils (NRCS 2012a) and topographic survey information (USGS 1987).

The majority of the wetlands onsite appear to have been historically altered from pre-settlement conditions. While no permanently flowing surface hydrology exists within the site, the wetlands include the agricultural drain which traverses the center of the site flowing from Locust Road on the east to where it passes under Prairie Avenue on the west as well as a portion of the ephemeral stream which enters the site flowing north under US 31.

Figure 3.5-3 portrays the wetland boundaries that were delineated and surveyed. Wetland descriptions are provided below:

Wetland A (3.21 acres)

Wetland A consists of a narrow, linear palustrine emergent wetland occurring along the various drainage channels throughout the northern portion of the site. Bare soil is prevalent; vegetated areas are typically dominated by calico aster (*Symphyotrichum lateriflorum*), and sedge species (*Carex* spp.). The eastern end of this wetland system opens up into a wide palustrine emergent area dominated by aster species, sedges, and wetland goldenrods (*Solidago* spp.). The southern portion of Wetland A is a forested wetland with dominant vegetation overstory consisting of green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), and American elm (*Ulmus americana*). Lower strata are dominated by arrow wood (*Viburnum dentatum*) and asters. The upper soil stratum throughout Wetland A consists of loams and sandy loams, all with redox concentrations. Habitat values of Wetland A appear to be relatively low, providing limited hydrological function and degraded habitat.

Wetland B (2.42 acres)

Wetland B consists of a mostly forested wetland widely encompassing the sinuous channel of an ephemeral stream within the southwest portion of the site. The overstory is dominated by cottonwood trees (*Populus deltoides*) and box elder maple (*Acer negundo*). The shrub and herbaceous strata are dominated by young green ash, spicebush (*Lindera benzoin*), cranberry viburnum (*Viburnum opulus*), Morrow's honeysuckle (*Lonicera morrowi*), currant (*Ribes cynosbati*), sedge species, Virginia waterleaf (*Hydrophyllum virginianaum*), wood nettle (*Laportea canadensis*), wood reed (*Cinna arundinacea*), wild garlic (*Allium vineale*), and calico aster. One small portion of this wetland near its northern terminus is dominated by reed canarygrass (*Phalaris arundinacea*). The upper soil strata evaluated throughout Wetland B consist of sandy loams, some with high concentrations of organic material. Habitat values of Wetland B appear to be marginal, apparently providing some hydrological functionality associated with the ephemeral stream and also providing some marginal habitat.

Wetland C (0.48 acres)

Located at the far southeast corner of the site, this wetland consists of a man-made pond with a thin fringe of palustrine emergent meadow encompassing it. Rice cutgrass (*Leersia oryzoides*) is the predominant fringe vegetation. Soil strata within this wetland consist of a thin layer of sand over low-chroma modified sandy mucky mineral. Habitat value of Wetland B is low, due to the small size and the landscape position near roads. However, the pond would likely help to attenuate the effects of surface water runoff from the southeastern portion of the site.

Wetland E (0.05 acres)

Wetland E consists of a small forested wetland pocket within an upland woodlot east of Wetland B. The overstory is generally dominated by cottonwood trees. Morrow's honeysuckle, crested sedge

(*Carex cristatella*), and calico aster are abundant within the ground layer. Soil strata consist of low-chroma loams with prominent redox concentrations. Habitat value of Wetland E appears to be low, due to the small overall size. However, the depressional wetland would likely help to attenuate the effects of surface water runoff.

Wetland F (0.15 acres)

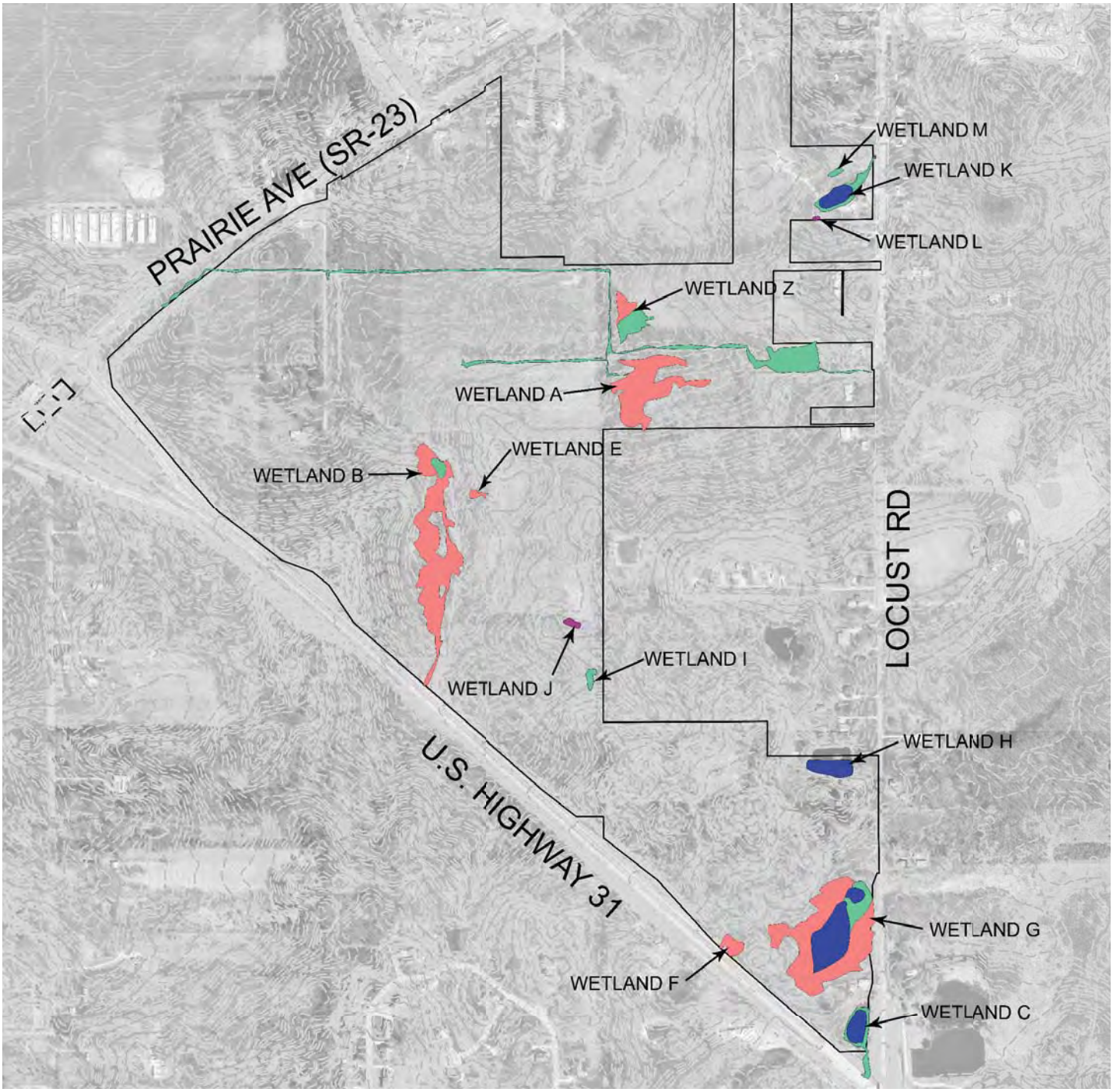
Wetland F consists of a small, forested wetland situated in a slight depression near U.S. Highway 31. The topography suggests that a vernal pool lies at the center of the wetland during springtime. The overstory is dominated by green ash. The shrub stratum consists of a few, small spicebush. The herbaceous stratum is dominated by bladder sedge (*Carex intumescens*), white grass (*Leersia virginica*), poison ivy (*Toxicodendron radicans*), and calico aster. Soils consist of a relatively deep organic layer upon silty loam. Although near a busy highway, Wetland F likely provides quality vernal pool habitat for amphibians and attenuates the surface water runoff it receives from U.S. Highway 31.

Wetland G (3.80 acres)

Wetland G consists of a forested wetland, a man-made pond, and a small palustrine emergent marsh wetland situated near the southeast corner of the property. The topography suggests that forested wetland may contain some small vernal pools during springtime. The overstory is dominated by red maple (*Acer rubrum*) and silver maple. The understory and herbaceous strata are generally dominated by spicebush, young silver maples, white grass, white avens (*Geum canadense*), and Morrow's honeysuckle. The small marsh area is dominated by cattail species (*Typha* spp.) and reed-canary grass. Soils within the forested wetland generally consist of a relatively deep muck/peat. Soils within the palustrine emergent wetland consist of organic muck over low-chroma silt loam. The forested portion of Wetland G provides some vernal pool habitat during springtime. If the man-made pond does not contain large fish, it may also serve as a breeding area for frogs and woodland salamanders. The forested wetland is adjacent to a fairly high quality remnant mesic upland forest habitat type, adding to its ecological value.

Wetland H (0.32 acres)

Wetland H consists primarily of a man-made pond (palustrine open water) with no other significant wetland type associated with it. Wetland H has ecological value, especially as possible breeding habitat for amphibians though it is limited since it is isolated from adjoining habitats by maintained lawn.



PFO (PALUSTRINE FORESTED) 6.60 acres

PEM (PALUSTRINE EMERGENT) 2.93 acres

POW (PALUSTRINE OPEN WATER) 1.88 acres

PSS (PALUSTRINE SCRUB-SHRUB) 0.07 acres

0 650 975 1300

1 inch = 650 ft.

Source: St. Joseph County GIS

Figure 3.5-3
South Bend Site Wetlands Survey

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Wetland I (0.06 acres)

Wetland I consists of a small, palustrine emergent wetland lying within a depression. The wetland is within the maintained high-voltage transmission line corridor and is dominated by reed-canary grass, elderberry (*Sambucus nigra*), and multiflora rose (*Rosa multiflora*). Upper soil strata consist of low-chroma silt loam and clay loam, both with redox concentrations. Wetland I has negligible hydrological and ecological value, due to its small size, landscape position, and homogenous vegetation community.

Wetland J (0.05 acres)

Wetland J consists of a small, palustrine scrub-shrub wetland situated in a slight depression between an upland woodlot and an old field. The overstory is generally dominated by cottonwood saplings, American elm saplings, and Morrow's honeysuckle. Calico aster and crested sedge are abundant within the herbaceous stratum. Upper strata of soils evaluated within Wetland J consist of low-chroma loams. Wetland J has negligible hydrological and ecological value, due to its small size and landscape restrictions.

Wetland K (0.44 acres)

Wetland K consists of a man-made pond with an extension of palustrine emergent meadow at both ends. Meadow willow (*Salix petiolaris*), reed-canary grass, and cattails are the dominant flora. Upper soil strata within Wetland K consist of low-chroma silt loam and sandy loam upon clay. Wetland K has limited ecological value as possible breeding habitat for amphibians.

Wetland L (0.01 acres)

Wetland L consists of a tiny forested wetland pocket that has been historically filled almost completely. The vegetation consists primarily of American elm, cranberry viburnum, calico aster, swamp white oak (*Quercus bicolor*), and cottonwood. Upper soil strata within Wetland L consist of low-chroma loam and silt loam with redox concentrations. Wetland L likely has limited hydrological and ecological value, due to its very small size and degraded condition.

Wetland M (0.03 acres)

Wetland M consists of a small wetland pocket located north of Wetland K. Dominant vegetation consists of American sycamore (*Platanus occidentalis*) saplings, reed-canary grass, and meadow willow. The upper strata of soils within Wetland M consist of low-chroma, unconsolidated sandy loam. Wetland M has limited hydrological and ecological value, due to its small size and degraded condition.

Wetland Z (0.46 acres)

Wetland Z is located within the north-central portion of the site, close to Wetland A. The northern portion of Wetland Z is palustrine forested, consisting primarily of a grove of cottonwood trees and saplings. Calico aster is the most abundant plant within the herbaceous stratum. The palustrine emergent portion of Wetland Z is a wet meadow dominated by calico aster and rough barnyard grass (*Echinochloa muricata*). Missouri ironweed (*Vernonia missurica*) and wetland goldenrod species. Upper soil strata within Wetland Z consist of low-chroma clay loams. Habitat value of Wetland Z is fair, due its relatively diverse wet meadow habitat (including several species typically found in wet prairies). Because of its landscape position, the wetland likely serves as a hydrologic buffer to the nearby drain network.

3.5.5.2 Elkhart Wetlands and Waters of the U.S.

A wetland delineation was conducted on November 14, 2012, which identified one wetland area approximately 0.02 acre in size. The methods used to conduct this wetland delineation were consistent with the procedures and general practices used by the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE 2009). This determination included review of available information including the Web Soil Survey *(*NRCS 2012b) and the county list of hydric soils (NRCS 2012a) and topographic survey information (USGS 1987).

Figure 3.5-4 portrays the wetland boundary that was delineated and surveyed. Wetland A consists of a shallow depression under an overhead utility corridor between an active agricultural field and the small woodlot on the adjoining property in the southern portion of the property. Vegetation within this palustrine emergent wetland included fork-flowered panicum-grass (*Panicum dichotomiflorum*), Virginia wild-rye (*Elymus virginicus*), smartweed (*Polygonum* sp.) and side-flowering aster (*Symphyotrichum lateriflorum*). Upper layer soil strata in Wetland A consist of low-chroma silty loam with some gravel below one foot in depth.

Wetlands were not identified in farmed areas of the site given the lack of hydrophytic vegetation and evidence of hydrology; however the Web Soil Survey soil map shows three locations on the site comprise approximately 18 acres of hydric soil. The hydric soil area in the northwest portion of the property contains a grassy swale through it which conveys water to a culvert under Nappanee Street. The hydric soil area in the southern portion of the property contained an open segment of damaged, but still functioning drain tiles. These physical hydrological modifications appear to currently operate at a capacity sufficient to prevent the re-establishment of wetland habitat, however in the absence or terminal damage of drainage tiles, these areas would potentially return to functional wetlands.

3.5.6 Wetland Regulatory Jurisdiction

As described in the USACE Regulatory Guidance Letter, the classes of waterbodies subject to Federal Clean Water Act jurisdiction, and therefore under the jurisdiction of the USACE are: traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries of traditional navigable waters that are relatively permanent, and wetlands that directly abut such relatively permanent tributaries. In addition, federal CWA jurisdiction also includes non-navigable tributaries that do not typically flow year round or have continuous flow at least seasonally, wetlands adjacent to such tributaries and wetlands, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary. In some situations, a significant nexus must be demonstrated between a wetland and a navigable water of the U.S. in order for the wetland to be considered jurisdictional

A meeting was held on January 29, 2013 with representatives from the USACE, IDEM, and consultants for the BIA during which wetland jurisdiction, permitting and mitigation issues were discussed (Atkins North America, Inc. [Atkins], 13/01/2013). The BIA's understanding is that the USACE would have sole wetland regulatory jurisdiction if and when the land is taken into trust. Without performing a jurisdictional determination, the USACE could not say which wetland they would consider jurisdictional but, based on the information provided at the meeting, they believe Wetlands A and B would be considered jurisdictional. The USACE also has a procedure for Preliminary Jurisdictional Determinations (PJDs). A PJD advises the applicant that the Corps of Engineers believes there may be waters of the United States on the property that fall under the Corps' regulatory authority. If the applicant requests and agrees to a PJD as part of the permit application process, all wetlands and waterbodies on the project site that are affected in any way by the proposed work are considered jurisdictional. A PJD enables the Corps of Engineers and the permit applicant to resolve the issue of jurisdiction without spending time on making an official determination of which wetlands fall within the USACE jurisdiction. At any time, an applicant may request an Approved Jurisdictional Determination (AJD), which would provide an official determination of jurisdictional waters on a site. An AJD can be administratively appealed. While a PJD can save time during the permitting process, this time savings comes at the potential cost of larger requirements for compensatory mitigation for wetland impacts, as the Corps requires mitigation for impacts to all jurisdictional wetlands. In these situations, the USACE and IDEM typically use the same mitigation standards which include ratios of 2.5 to 1 for emergent wetlands and 4.0 to 1 for forested wetlands, both on and offsite. At this time, there are no wetland mitigation banks in the Kankakee River watershed with appropriate habitat credits. The USACE would prefer to see suitable lands within the watershed used for wetland mitigation, and that mitigation take place in the same wetland/habitat type as that which is impacted. In addition to wetland impacts, potential protected species impacts would also have to be addressed at the time of permitting. The USACE thought the Elkhart site could have more wetlands than have been identified if it can be determined that functioning wetlands could return if the agricultural drain tiles were broken,

though there is no specific USACE guidance for making this determination. Notes from this meeting are included in **Appendix D**.

3.5.6.1 South Bend Wetland Regulatory Jurisdiction

Wetlands A, B, and Z appear to be regulated due to being relatively permanent waters which flow directly or indirectly to a traditional navigable water (Wetlands A and B) or they are wetlands adjacent to relatively permanent waters that flow to a traditional navigable water (Wetland Z).

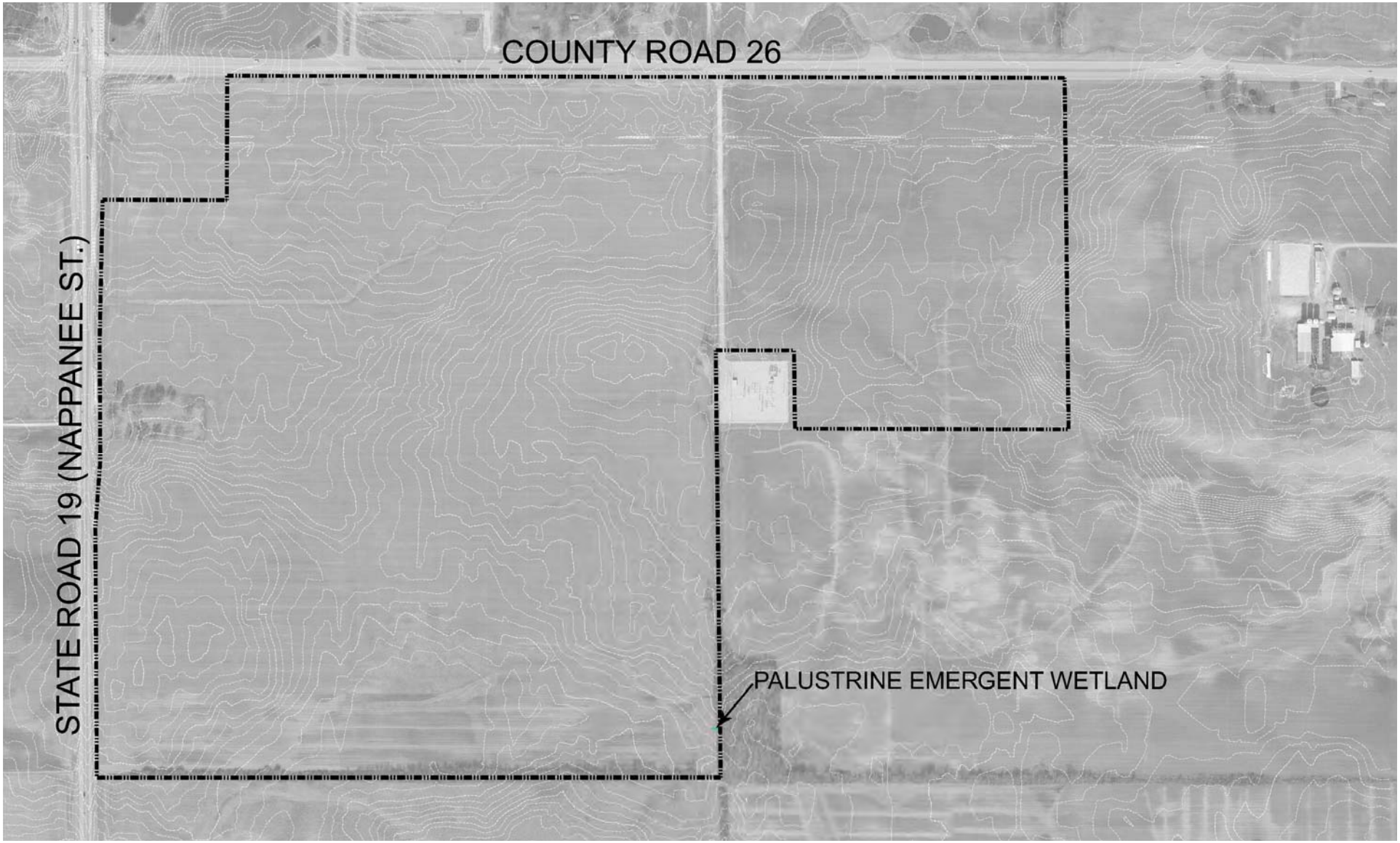
3.5.6.2 Elkhart Wetland Regulatory Jurisdiction

Wetland A does not appear to be regulated due to its isolation from direct or indirect connection to jurisdictional waters. However, additional jurisdictional wetlands may occur on this site if existing drainage channels are not maintained, and hydrology is allowed to return to the site's several areas of hydric soil.

3.6 CULTURAL RESOURCES

Cultural resources are prehistoric and historic archaeological sites, districts, structures, or locations considered significant to a culture, a subculture, or a community for scientific, traditional, religious, or other reasons. Prehistoric archaeological sites may include rock shelters, lithic scatters, flaked stone scatters, rock rings or alignments, tool procurement sites, thermal features/roasting pits with artifact scatters, and rock art locations. Historic sites may include buildings, structures, features such as mine shafts, transportation routes, and refuse deposits [36 CFR Section 800.16 (l)(1) and 4 CFR 1508.8].

Legislative mandates, including but not limited to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, the National Environmental Policy Act of 1969, as amended and the Archaeological Resources Protection Act of 1979, as amended require federal agencies make a reasonable and good faith effort to identify historic properties (districts, historic and archeological sites, buildings, structures, or objects) and to assess the potential effects federal actions may have on historic properties included, or eligible to be included, in the National Register of Historic Places (NRHP).



Palustrine Emergent Wetland (.017 acres)

0 500 750 1000

1 inch = 500 ft.

Source: Elkhart County GIS

Figure 3.5-4
Elkhart Site Wetland Survey

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To be eligible for NRHP listing, an historic property (including archeological sites) must satisfy at least one of the National Register criteria as set forth in 36 CFR 60.4. A significant site or property is one that possesses integrity of location, design, setting, materials, workmanship, feeling, and association and:

- That are associated with events that have made a significant contribution to the broad patterns of our history (Criteria A); or
- That are associated with the lives of persons significant in our past (Criteria B); or
- That embody the distinctive characteristics of a type, period, or method of construction, or a significant and distinguishable entity whose components may lack individual distinction (Criteria C); or
- That has yielded, or may be likely to yield, information important in prehistory or history (Criteria D).

3.6.1 Cultural Overview

The State of Indiana has been inhabited since the Paleoindian period (ca. 10,000-7500 BC) to the present. The Potawatomi Indians, a well-known Native American group, have been documented in the State from the late 1600s to the early to mid-nineteenth century (Jones and Johnson, 2012).

> *"Potawatomi groups moved around a lot in early historic times. In the early 18th century, some groups of Potawatomis lived along the southern shore of Lake Michigan and along the Michigan-Indiana border. Thus, they occupied areas in extreme northern Indiana such as in the St. Joseph, and Elkhart River drainages. In the 1770s, Potawatomi groups began moving as far south as the Wabash River, ranging over the northern part of the state. They also lived along the Kankakee and Calumet rivers. In 1838, the Potawatomis were removed from [Indiana]. Today, some Potawatomis continue to live in northern Indiana and southern Michigan"* (Indiana Division of Historic Preservation and Archaeology [DHPA], 2013).

More specifically,

> *"prior to the formation of the United States, the Potawatomi Tribe, of which the Pokagon Band is a constituent part, occupied the area between Detroit and Chicago in southern Michigan, northern Indiana and northern Illinois. Various Potawatomi bands lived in villages throughout this territory, including the ancestral villages of the Pokagon Band located in the St. Joseph-Paw Paw River Valley in the southwest corner of Michigan's lower peninsula. These Potawatomi bands shared common bonds of kinship, commerce, culture, and geography. The Potawatomi villages in the St. Joseph River Valley were united behind the leadership of Leopold Pokagon in the negotiations that led to the 1833 Treaty of Chicago (the "Treaty"). As a result of the Treaty, a majority of the Potawatomi were removed from Michigan and Indiana. The Pokagon Band, as the Potawatomi villages in the St. Joseph River Valley came to be known, remained in Michigan"* (Pokagon Band of Potawatomi Indians, 2012).

European exploration of the area began in the late seventeenth century with Canadian fur traders and French missionaries entering the area. However, the first white settler in present-day St. Joseph County was Pierre Navarre in 1820 (Center for History 2013a). In the early twentieth century, South Bend began emerging as a city with the development of the automotive industry (Center for History 2013b). Of note, the Studebaker Blacksmith Shop and Carriage Factory was located in South Bend. The factory engaged in blacksmithing and woodworking, and became a leading manufacturer of quality wagons through the development of kilns that could dry green timbers quickly to meet larger orders. Later they also began to produce a variety of wheeled vehicles including carriages, and eventually automobiles in 1902 (Andrews, 2013a). Today, the Studebaker family and business are the subject of a local national museum (The Studebaker National Museum) and many of the properties associated with the family are part of The Studebaker-Bendix Heritage Trail including the JMS Building built by J.M. Studebaker, the Studebaker Administration Building, the City Cemetery in which members of the family are buried, Former 1st Presbyterian Church, Bendix Woods County Park (all listed in the NRHP), and Tippecanoe Place (home of Clem Studebaker), a National Historic Landmark (Studebaker National Museum, 2013).

3.6.2 Cultural and Religious Traditional Cultural Properties

A traditional cultural property is a place that is eligible for listing in the NRHP because of its association with "cultural practices and beliefs that are rooted in the history of a community and are important to maintaining the continuity of that community's traditional beliefs and practices" (Parker and King 1998). A few types of traditional cultural properties include locations:

- Associated with the traditional beliefs of a Native American group about its origins, cultural history, or the nature of the world
- Rural communities whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-terms residents
- Native American religious practitioners have traditionally, and are known or thought to go today, to perform ceremonial activities

According to the National Park Service (NPS) Native American Consultation Database (NPS 2013), in addition to the Pokagon Band of Potawatomi Indians, four other federally recognized tribes (the Citizen Potawatomi Nation, Oklahoma; the Forest County Potawatomi Community, Wisconsin; the Hannahville Indian Community, Michigan; and Indiana; and the Prairie Band of Potawatomi Nation, Kansas) have expressed interest in being notified of undertakings in St. Joseph and Elkhart Counties, Indiana.

Consequently, these tribes were contacted as part of this undertaking. None of the contacted tribes responded to the notification. Additionally, as a result of the archeological investigations discussed in the following sections, "no Native American/pre-European cultural materials were found" (Andrews 2013a, b). Similarly, while the results of the architectural survey of standing structures

determined one resource as NRHP-eligible, the resources identified as a whole did not merit NRHP inclusion as part of a rural district (Russell, 2013). Therefore, a separate traditional cultural properties survey was not undertaken for this proposed undertaking.

3.6.3 Previous Investigations

Although the area has been inhabited since the Paleoindian period, the proposed South Bend and Elkhart sites had not been previously archeologically investigated. However, as part of the proposed undertaking, an archeological survey was conducted in 2011 by Andrews Cultural Resources (Andrews) on the South Bend site and in 2012 on the Elkhart site. Additionally, in 2013, Atkins conducted an architectural survey of standing structures to identify and evaluate effects to historic-age (50 years or older from time of project letting) structures within the South Bend site. The results of these investigations are summarized below. Pursuant to Section 9 of the Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470hh) and Section 304 of the National Historic Preservation Act of 1966 (16 U.S.C. § 470w-3), the archeological surveys of the South Bend site that were conducted by Andrews Cultural Resources and the historic property survey of the Elkhart site conducted by Atkins have been withheld from public distribution in order to protect sensitive information concerning cultural resources.

3.6.3.1 South Bend

In 2011, Andrews Cultural Resources conducted a Phase I archeological survey of approximately 193.36 acres (15 parcels owned by the Pokagon Band) that included the current South Bend site. During the investigation, five newly recorded historic archeological sites (12-Sj-483, 12-Sj-484, 12-Sj-485, 12-Sj-486 and 12-Sj-487) were identified along with at least seven additional historic debris/dump areas mostly associated with non-extant homes. Sites 12-Sj-483 and 12-Sj-484 were identified on a parcel owned by the Pokagon Band, but this parcel is not included as part of the fee-to-trust application, nor is it analyzed in this EIS and should be regarded only for potential cumulative impacts.

Sites 12-Sj-485 and 12-Sj-486 were identified on Parcel 3 also as surface scatters of historic-age and contemporary debris. 12-Sj-485 was located along both sides of a two track road and consisted of household items, metal car parts, cans, tires, small chunks of concrete, plastic containers and cups. No further information about 12-Sj-486 was reported. However, no manufacturing marks were identified on the artifacts at 12-Sj-485 or 12-Sj-486 (Andrews, 2013a).

Site 12-Sj-487 was located on Parcel 14 extending onto Parcels 15 and 17. 12-Sj-487 is an historic industrial type waste dump consisting of an enormous quantity of cinders, an asphalt/tar type substance in the form of small to medium sized lumps and several large fire bricks of a type used in the construction of kilns and large furnaces where temperatures are extremely high. According to the 1875 and 1895 plat maps, these parcels along with Parcel 13 were owned by S. Studebaker (presumably Samuel or Susan Studebaker) and H. Studebaker (presumably Henry Studebaker)

respectively (Andrews, 2013). Samuel Studebaker (unrelated to John Studebaker of the Studebaker Blacksmith Shop and Carriage Factory) was one of the early settlers of St. Joseph County. His daughter, Susan Studebaker married Henry Studebaker (son of John Studebaker) (Chapman, 1880; Howard, 1907).

However, according to Andrews Cultural Resources, there is no documentary or literary evidence to support the view that any of the John Studebaker family ever lived on the parcel within the project area owned by Henry Studebaker. Although, the parcel does bear the distinction of being associated with the Studebaker family and a house may have existed upon the property which the Studebaker's rented out. The presence of a home is implied from a historical source that states a family by the name of Robbins stayed upon a farm near South Bend, owned by Henry Studebaker in 1849 (Andrews, 2013a).

As such, Andrews Cultural Resources concluded none of these debris/dump sites are significant and none of the historic material/debris had significant interpretive value. No additional archaeological investigations were recommended for any of the parcels associated with the project and any proposed ground disturbing undertakings within the project area will have no effect/impact upon any archaeological resources (Andrews, 2013a). Both the BIA and THPO have concurred with these findings (Rosen, 2013a; Winchester, 2013).

In 2012, as part of a Phase I archeological survey of the Elkhart site, Andrews Cultural Resources conducted investigation of approximately 7.5 acres on 3 additional Parcels (7, 8, and 9) at the South Bend site. Within these parcels, only structural debris and contemporary household items like children's toys, cans and bottles with no artifacts older than 50 years or significant diagnostic historic material were identified. Research of plat maps of the area from 1863, 1875, 1895, 1900 and 1929 did not depict any structures on these parcels. Andrews concluded the parcels to be unremarkable, the historic material/debris to have no significant interpretive value and recommended no further archeological investigations on the parcels (Andrews, 2013b). Both the BIA and THPO have concurred with these findings (Rosen, 2013a; Winchester, 2013).

In 2013, the BIA identified 24 potentially historic-age resources within or in the immediate vicinity of the South Bend site. Following BIA's consultation with the Division of Historic Preservation and Archaeology and THPO regarding the 24 historic-age resources identified, it was concluded a survey of only the historic-age resources on the South Bend site was necessary (BIA Structures 4, 5, 6, 8, 9, 10, 11, 12, 19 and 24). Therefore, Atkins conducted an architectural survey of standing structures of approximately 166 acres (18 parcels) on the South Bend site. During the investigation, existing resources built prior to 1968 (50 years of age with an additional 5 year buffer in case of delay with project letting date) were documented and assessed for eligibility for inclusion in the NRHP. The survey resulted in the identification of four properties containing eight historic-age resources ranging in age from 1910 to circa (ca.) 1953. Of the resources identified, BIA Structures 3 (Atkins Resource 01A and 01B), 5 (Atkins Resource 02), and 6 (Atkins Resource 03) lacked

integrity, known significance and did not have informational potential. Therefore, they were not recommended for NRHP inclusion.

BIA Structure 10 (Atkins Resources 04A-D) was associated with both a single-family dwelling (Atkins Resource 4A) and associated structures (Atkins Resources B-D). Atkins Resources B-D, while retaining a high level of integrity, do not appear to be eligible for listing in the NRHP under Criterion C because the resources do not embody distinctive characteristics, represent the work of a master or possess high artistic value as single resources or qualify as a complex with Resource 04A. Additionally, none of the resources have known historic associations and do not appear to merit listing in the NRHP under Criteria B or C, or under Criterion D for information potential. No further consideration of these resources are recommended under Section 106 of the NHPA.

However, Atkins Resource 04A was identified as a two-story former dwelling with a full basement constructed in 1924 that currently serves as the Pokagon Band's Indiana Tribal Government Office. The American Foursquare plan structure appeared to retain design, materials, workmanship, feeling, location and setting. Therefore, Resource 04A was recommended as eligible for inclusion in the NRHP under Criteria C. No historic associations were identified during current research of the property, and thus Resource 04A is not recommended eligible for inclusion under Criteria A or Criteria B. Additionally, the resource does not appear eligible under Criteria D for informational potential. Further research could potentially uncover additional information that could merit NRHP inclusion under Criteria A and/or B. (Russell, 2013).

Structures 8, 9, 11, 12, 19, and 24 were also identified by the BIA as being within the South Bend site. BIA Structure 9 was a non-historic age garage associated with a dwelling that appeared to have been moved. Although visible on topographic maps, BIA Structures 8, 11, 12, 19 and 24 have no extant structures at those locations. Both the BIA and THPO later concurred with these findings (Rosen, 2013b; Zimmerman, 2013b)

3.6.3.2 Elkhart

As previously mentioned, in 2012, Andrews Cultural Resources conducted a Phase I archeological survey of approximately 170.42 acres (2 parcels) at the Elkhart site. During the investigation, one newly recorded historic archeological site (12-E-450) was identified along with at least three additional scatters of structural debris and associated contemporary household items.

Site 12-E-450 was identified on Parcel 63 as an historic site consisting of several scatters of historic-age artifacts, modern debris and foundation debris piles. Artifacts consisted of ceramics, vessel glass, window glass, and miscellaneous household and personal items such as pieces of coal, jewelry and a house key dating to ca. 1850–1950. Although foundation debris piles consisting of large pieces of concrete with large stones adhering to them were identified, no structural foundation was located (Andrews, 2013b).

Limited archival research showed Jared A. Stillman was issued a land patent for the area on 5 July 1837. In 1874, a structure owned by J. Yoder, presumably a house, is shown at the location where the historic period artifacts from 12-E-450 were found on Parcel 63. The structure is still depicted on the 1951 Concord Township Plat Map with the property being owned by Harrison Miller. This also the last date a structure is shown for this location on plat maps (Andrews, 2013b).

Andrews concluded that the historic farmstead site identified during the survey is similar to thousands of sites in the region and that none of the historic material/debris had significant interpretive value. No additional archaeological investigations were recommended for any of the parcels associated with the project and any proposed ground disturbing undertakings within the project area will have no effect/impact upon any archaeological resources (Andrews, 2013b). Both the BIA and THPO have concurred with these findings (Rosen, 2013a; Winchester, 2013).

3.6.4 Results of the Records Review

As part of the archeological site location surveys, Andrews Cultural Resources conducted literature research at the South Bend and Elkhart Public Libraries, and by way of internet sites where they reviewed historic atlases and plat maps of the project area for the presence of any farmsteads and other occupational evidence. County, city and state history books and articles were also examined to develop an understanding of the land use history within and adjacent to the project area. On the South Bend site location, Prairie Avenue (State Highway 23) was identified as a historic-age road/trail. Additionally, several parcels within the South Bend site were identified as being owned by the Studebaker family (Andrews, 2013a). Within the Elkhart site, one parcel was identified having had an historic-age structure on the property (Andrews, 2013b).

Also as part of the Phase I investigations, the Pokagon Band of Potawatomi Indians Tribal Historic Preservation Officer contacted the DHPA to request information relative to any previously recorded archeological or cultural resources known to exist within the project areas. In reference to the South Bend project, no previously recorded known archeological or cultural resources were found to exist at the proposed South Bend site (Andrews, 2013a). In reference to the Elkhart project, no previously recorded known archeological or cultural resources were found to exist on or adjacent to the St. Joseph County parcels of the proposed Elkhart site. However, three previously known pre-European find spots (12-E-0202, 12-E-0203 and 12-E-0204) were found to exist within one mile of Parcels 63 & 64 of section 31, Concord Township in Elkhart County, but not within the Elkhart site. 12-E202 is an isolated find of an Early Archaic small Kirk serrated point while 12-E-203 is an isolated find of a Late Archaic fragment of a distal end of a lanceolate biface. 12-E-204 is an isolated find of the distal end of a biface fragment (Andrews, 2013b).

At the request of the THPO in 2013, a secondary review of the DHPA Indiana State Historic Architectural and Archaeological Research Database (SHAARD) was undertaken by Mark Schurr of the University of Notre Dame as part of the EIS effort to identify sites within 0.25 mile of the

proposed South Bend and Elkhart sites. Again, no historic or prehistoric sites within the South Bend and Elkhart sites were identified and the same 3 previously recorded prehistoric sites (12-E-0202, 12-E-0203, 12-E-0204) within 0.25 mi of the Elkhart site were identified (Schurr, 2013).

Atkins also conducted research of available records using the SHAARD Geographic Information System (GIS) and database to identify previously recorded archeological sites, NRHP-listed properties and districts, cemeteries, historic bridges and county survey sites. Additionally, the DHPA's lists of Indiana Properties Listed Only on the State Register, Indiana Properties Listed on the State and National Registers, and Indiana Properties Just Listed on the National Register were also reviewed. As an additional source of NRHP-listed properties, the National Park Service's NRHP database and GIS Spatial Data was consulted. Finally, the NPS's National Historic Landmarks program was also reviewed.

Atkins identified 4 previously recorded Indiana Historic Sites and Structures Inventory County Survey sites (141-598-11024, 141-598-11025, 141-598-11026 and 141-598-70004) within 0.25 mi of the South Bend site. Of these, 141-598-11025 and 141-598-11026 (BIA Structures 1 and 2, respectively) were identified in the visual area of effect as established by the BIA in consultation with the DHPA. These resources were identified in the SHAARD GIS as unknown. One previously recorded archeological site (12-E-203) was identified within 0.25 mi of the Elkhart site.

3.7 SOCIOECONOMIC CONDITIONS

Nilesen Claritas, a reputable national economic and demographic research firm, provided the economic, demographic, and housing data. Employment data was obtained from the Indiana Department of Workforce Development which assists with the creation of jobs in Indiana by assisting companies to produce new jobs and improve employee skills. Data regarding community infrastructure such as schools, libraries and parks was obtained from the local municipalities.

3.7.1 Socioeconomic Characteristics

The baseline socioeconomic conditions were analyzed for four levels of geography: 1) the City of South Bend, Indiana, which pertains to Alternatives A, C, and D; 2) the County of St. Joseph, Indiana, which also pertains to Alternatives A, C, and D; 3) the City of Elkhart, Indiana, which pertains to Alternative B; and, 4) the County of Elkhart, Indiana, which also pertains to Alternative B.

3.7.1.1 Baseline Conditions

Population and Households

Economic and demographic data were obtained from Nielsen Claritas (Nielsen 2013). According to Nielsen Claritas data, the population of the City of South Bend equals 100,681 as of 2013. The population has decreased by 980 since the 2010 census and by 6,727 since the 2000 census, decreases of 1.0 percent and 7.1 percent respectively. The population of the City of South Bend is

projected to decrease by 1,153 by the year 2018, a decrease of approximately 1.2 percent. There are 39,637 households in the City of South Bend as of 2013. The number of households has decreased by 134 since the 2010 census and by 2,716 since the 2000 census, decreases of 0.3 percent and 6.4 percent, respectively. The number of households in the City of South Bend is projected to decrease by 218 by the year 2018, a decrease of approximately 0.6 percent.

According to Nielsen Claritas data, the population of the County of St. Joseph equals 216,314 as of 2013. The population has decreased by 617 since the 2010 census, a decrease of 0.2 percent. The population has increased by 754 since the 2000 census, an increase of 0.3 percent. The population of the County of St. Joseph is projected to decrease by 24 people by the year 2018, a decrease of less than one-tenth of 1 percent. There are 102,978 households in the County of St. Joseph as of 2013. The number of households has decreased by 91 since the 2010 census, a decrease of 0.1 percent. The number of households has increased by 2,231 since the 2000 census, an increase of 2.2 percent. The number of households in the County of St. Joseph is projected to increase by 223 by the year 2018, an increase of approximately 0.2 percent.

According to Nielsen Claritas data, the population of the City of Elkhart equals 53,474 as of 2013. The population has increased by 212 since the 2010 census, an increase of 0.4 percent. The population has decreased by 243 since the 2000 census, a decrease of approximately 0.5 percent. The population of the City of Elkhart is projected to increase by 380 by the year 2018, an increase of approximately 0.7 percent. There are 20,094 households in the City of Elkhart as of 2013. The number of households has increased by 97 since the 2010 census, an increase of 0.5 percent. The number of households has decreased by 265 since the 2000 census, a decrease of 1.3 percent. The number of households in the City of Elkhart is projected to increase by 167 by the year 2018, an increase of approximately 0.8 percent.

According to Nielsen Claritas data, the population of the County of Elkhart equals 200,504 as of 2013. The population has increased by 2,945 since the 2010 census and by 17,703 since the 2000 census, increases of 1.5 percent and 9.7 percent respectively. The population of the County of Elkhart is projected to increase by 4,611 people by the year 2018, an increase of 2.3 percent. There are 71,129 households in the County of Elkhart as of 2013. The number of households has increased by 885 since the 2010 census and by 4,972 since the 2000 census, increases of 1.3 percent and 7.5 percent respectively. The number of households in the County of Elkhart is projected to increase by 1,523 by the year 2018, an increase of approximately 2.1 percent.

Housing

According to Nielsen Claritas data, the number of housing units in the City of South Bend equals 46,057 as of 2013. Single family units, attached or detached, account for 79.7 percent of the housing supply. Approximately 4.4 percent of the supply has been built since the year 2000. The number of housing units occupied equals 39,637, a vacancy rate of 13.9 percent. Of those units occupied, 60.3

percent are owner-occupied and 39.7 percent are renter-occupied. The average length of residence for owner-occupied units is 20 years. The average tenure for renter-occupied units is seven years. The median value of owner-occupied units is $86,980.

According to Nielsen Claritas data, the number of housing units in the County of St. Joseph equals 114,778 as of 2013. Single family units, attached or detached, account for 78.9 percent of the housing supply. Approximately 9.3 percent of the supply has been built since the year 2000. The number of housing units occupied equals 102,978, a vacancy rate of 10.3 percent. Of those units occupied, 69.0 percent are owner-occupied and 31.0 percent are renter-occupied. The average length of residence for owner-occupied units is 19 years. The average tenure for renter-occupied units is seven years. The median value of owner-occupied units is $117,224.

According to Nielsen Claritas data, the number of housing units in the City of Elkhart equals 23,344 as of 2013. Single family units, attached or detached, account for 62.7 percent of the housing supply. Approximately 7.5 percent of the supply has been built since the year 2000. The number of housing units occupied equals 20,094, a vacancy rate of 13.9 percent. Of those units occupied, 56.3 percent are owner-occupied and 46.7 percent are renter-occupied. The average length of residence for owner-occupied units is 19 years. The average tenure for renter-occupied units is six years. The median value of owner-occupied units is $97.081.

According to Nielsen Claritas data, the number of housing units in the County of Elkhart equals 78,728 as of 2013. Single family units, attached or detached, account for 72.3 percent of the housing supply. Approximately 13.9 percent of the supply has been built since the year 2000. The number of housing units occupied equals 71,129, a vacancy rate of 9.6 percent. Of those units occupied, 70.0 percent are owner-occupied and 30.0 percent are renter-occupied. The average length of residence for owner-occupied units is 17 years. The average tenure for renter-occupied units is six years. The median value of owner-occupied units is $97.081.

Employment

Employment data was obtained from the Indiana Department of Workforce Development [IDWD] (Indiana 2013). According to IDWD data, the total labor force in the City of South Bend equaled 43,200 as of January 2013. The unemployment rate equaled 12.4 percent, compared to 9.6 percent for Indiana as a whole. The total labor force in the County of St. Joseph equaled 123,521 as of January 2013. The unemployment rate equaled 10.8 percent. Labor force and unemployment data for January as presented are not seasonally adjusted. Labor force and unemployment data measure the number of residents of a given area with and without jobs regardless of where those jobs are located. By contrast, employment by establishment data measures the number of jobs at businesses in a given area regardless of where the employees live. For the third quarter of 2012, the most recent time period available, the total employment at establishments in St. Joseph County equaled 114, 368. Employment by establishment data is not available for the City of South Bend.

According to IDWD data, the total labor force in the City of Elkhart equaled 22,680 as of January 2013. The unemployment rate equaled 12.5 percent. The total labor force in the County of Elkhart equaled 91,188 as of January 2013. The unemployment rate equaled 10.3 percent. For the third quarter of 2012, the most recent time period available, the total employment at establishments in Elkhart County equaled 110,970. Employment by establishment data is not available for the City of Elkhart.

3.7.1.2 Regional Economic Base and Fiscal Resources

The St. Joseph County employment base is dominated by Health Care and Social Services, Manufacturing, Retail Trade and Educational Services. Together, these four segments accounted for 53.0 percent of the jobs in the county in the third quarter of 2012. This is also reflected in the list of the top 10 employers in the county provided on the IDWD website (Indiana 2013):

1. University of Notre Dame (Notre Dame)
2. Memorial Hospital-South Bend (South Bend)
3. St. Joseph County of Insurance (South Bend)
4. Honeywell Aerospace (South Bend)
5. Memorial Edwards Ctr (South Bend)
6. St. Joseph Regional Medical Ctr (Mishawaka)
7. AM General LLC (Mishawaka)
8. Liberty Mutual (Mishawaka)
9. Tribune Business Weekly (South Bend)
10. Robert Bosch Braking Systems (South Bend

As shown above, the majority of the major employers in St. Joseph County are located in the City of South Bend. The total property tax revenue collection by the City of South Bend in 2011 was $46,668,764 according to the Comprehensive Annual Financial Report of the City of South Bend. The 2010 total tax levy, payable in 2011, on the proposed fee-to-trust parcels was $36,240.71, approximately 0.08% of the city's total property tax revenue in 2011.

The Elkhart County employment base is overwhelmingly dominated by Manufacturing, accounting for 46.7 percent of total jobs in the county. Transportation Equipment Manufacturing is the dominant sub-sector, accounting for approximately half of all Manufacturing jobs. Health Care and Social Services, and Retail Trade are the distant second and third largest sectors, each accounting for less than 10 percent of the employment base. This is also reflected in the list of the top 10 employers in the county provided on the IDWD website:

1. Jayco Inc (Middlebury)

2. Elkhart General Healthcare (Elkhart)
3. Henkels & Mc Coy (Elkhart)
4. IU Health Goshen (Goshen)
5. Supreme Industries Inc (Goshen)
6. Conn-Selmer Inc. (Elkhart)
7. Supreme Corp (Goshen)
8. Utilimaster Corp (Wakarusa)
9. Heartland Recreational Vhcls (Elkhart)
10. Newmar Corp (Nappanee)

Several of the companies listed are Recreational Vehicle manufactures, with others manufacturing trucks and truck parts. As shown above, four of the major employers in Elkhart County are located in the City of Elkhart. The total property tax revenue collection by the County of Elkhart in 2011 was $28,296,658 according to the Annual Statistical Report of Elkhart County. The 2012 total tax levy, payable in 2013, on the Alternative B parcels is $5,646, approximately 0.02% of the county total.

3.7.2 Community Infrastructure

3.7.2.1 Schools

Public schools in the City of South Bend are operated by the South Bend Community School Corporation. There are 18 primary schools, 10 intermediate schools, six high schools and three specialty schools. The district had a total enrollment of 19,478 as of October 1, 2012 (South Bend Community School Corporation 2013). The proposed fee-to-trust parcels fall within the boundaries of Hay Primary school, located approximately 4.2 miles from the subject site; Greene Intermediate School, located approximately 5.2 miles from the subject site; and Riley High School, located approximately 3.9 miles from the subject site. According to the website of the City of South Bend, there are also 23 private schools serving some or all of grades K-12; six liberal arts, community and technical colleges; and five universities, including the world-famous University of Notre Dame. The closest school of any kind is Our Lady of Hungary, located 2.1 miles from the subject site, offering grades K-8. The closest post-secondary institution is Ivy Tech Community College, located 3.5 miles from the subject site.

The site for Alternative B is located in the Concord Community Schools district. There are four primary schools, one intermediate school, one junior high school and one high school. The district had a total enrollment of 4,999 as of September 4, 2012. The Alternative B site falls within the boundaries of West Side Elementary School, located approximately 4.2 miles from the Alternative B site; Concord Intermediate School, located approximately 5.7 miles from the Alternative B site; Concord Junior High School, located approximately 3.6 miles from the Alterative B site; and

Concord High School, located approximately 4.7 miles from the Alternative B site. The closest school of any kind is Elkhart Christian Academy, located 3.2 miles from the Alternative B site, offering grades K-12. According to the City of Elkhart website, there are five post-secondary institutions with branches or course offerings in the Elkhart area. The closest post-secondary institution is Associated Mennonite Biblical Seminary, located 4.3 miles from the Alternative B site.

3.7.2.2 Libraries

According to the St. Joseph County Public Library website, the closest library branch to the proposed fee-to-trust parcels is the Tutt Branch, located 3.2 miles from the subject site (St. Joseph 2013). According to the Elkhart Public Library website, the closest library branch to the Alternative B site is the Pierre Moran Branch, located 4.8 miles to the northeast (Elkhart 2013).

3.7.2.3 Parks

The closest park to the proposed fee-to-trust parcels is Rum Village Park, located 1.2 miles to the northeast. According to its website, the park is situated on 160 acres of rolling woodlands, offering a nature center with a variety of public, group and day camp programs, as well as disc golf, and trails for running, biking and hiking (South Bend Park 2013). There are no parks in the area surrounding the Alternative B site. The City of Elkhart to the north has numerous community and neighborhood parks.

3.7.3 Pokagon Band Socioeconomic Conditions

3.7.3.1 History of Pokagon Band's Purpose and Need to Restore Its Homeland

Chapter 1 Purpose and Need indicates that the Pokagon Band needs an inalienable land base in northern Indiana. Section 3.7.3 explains that purpose and need in further detail, enough detail to provide the factual basis for the Section 4.7 assessment of impacts of the alternatives on the Band's purpose and need for the proposal.

Potawatomi people have called the land in the lower Great Lakes area home for hundreds of years. Prior to the formation of the United States, the Potawatomi Tribe, of which the Pokagon Band is a constituent part, occupied the area between Detroit and Chicago in southern Michigan, northern Indiana and northern Illinois. Through a series of treaties entered into between the Potawatomi Tribe and the United States in the first half of the nineteenth century, the Potawatomi tribe relinquished rights to virtually all of its land. In the 1833 Treaty of Chicago, the Pokagon Band was the only Potawatomi band that negotiated a right to remain in its ancestral homeland in the St. Joseph-Paw Paw River Valley while the other bands agreed to move to Kansas or Iowa.

In the years following the ratification of the Treaty of Chicago, the Pokagon Band remained virtually landless and struggled to support itself and to adapt to the economy and culture of the dominant society. Despite these enormous challenges, the Band continued to maintain a sense of common

identity and purpose and a tribal government, which enabled the Band to advocate for its rights. The Band petitioned for reorganization and assistance under the Indian Reorganization Act of 1934 (25 U.S.C. § 461 et seq.), but the Federal Government declined the Band's request due to the poor financial condition of the Federal Government during the Great Depression. Consequently, the federal government never acquired land for the Band during the nineteenth and twentieth centuries and neglected its government-to-government relationship with the Band.

In 1994, Congress reaffirmed the Pokagon Band's status as a sovereign, federally-recognized Indian tribe by enactment of the Pokagon Restoration Act, 25 U.S.C. § 1300j et seq. ("Restoration Act"). Section 6 of the Restoration Act mandates that the Secretary of the Interior acquire land in the name of the United States to be held in trust for the benefit of the Band ("trust land") and become part of the Band's reservation. Section 7 of the Restoration Act establishes a service area for the Band that consists of the Michigan counties of Allegan, Berrien, Van Buren, and Cass and the Indiana counties of La Porte, St. Joseph, Elkhart, Starke, Marshall, and Kosciusko ("Service Area"). The ten-county Service Area is part of the territory that the predecessors of the Pokagon Band and other constituent Potawatomi bands ceded to the United States in treaties. As reflected in the Restoration Act, the Service Area represents both the ancestral and the modern homeland of the Pokagon Band. The importance the Pokagon Band places on restoring a homeland through land acquisition is reflected in the Pokagon Band Constitution, which states in Article IV (Tribal Lands): "The Pokagon Band is dedicated to re-establishing a tribal land base."

Although, the Restoration Act mandates that the Secretary acquire trust lands for the Band, it does not specify where such lands should be located or what procedural requirements should apply to the land acquisition process. Consequently, in 1998 the Band and the Secretary of the Interior negotiated a memorandum of understanding to address these and other potential issues in implementing the broad mandate of Section 6 of the Restoration Act. Paragraph 1 of the MOU states that the primary purpose of the MOU is "... to establish general principles setting forth the geographic areas within which the Band will acquire fee land to submit to the Secretary for acquisition in trust." Paragraph 3 of the MOU states that the geographic areas referenced in paragraph 1 shall be known as "consolidation sites," which the MOU states "... shall be located in the vicinity of Dowagiac, Michigan; New Buffalo, Michigan; Hartford, Michigan; and South Bend, Indiana." The South Bend, Indiana consolidation site is the only one of the Band's four consolidation sites that still lacks trust land nearly twenty years after Congress enacted the Restoration Act.

3.7.3.2 Pokagon Band's Prior Efforts to Acquire Trust Land in Indiana

In 2001, the Band filed a trust land application with the Bureau of Indian Affairs that included 1,460 acres located in St. Joseph County and LaPorte County, Indiana (the "North Liberty" site), along with 1,434 acres located in Cass County, Michigan, and 775 acres located in Van Buren County, Michigan. Before the BIA acted on the trust land application, the Band determined that the best use of the North Liberty site would be to enroll it in a Wetland Reserve Program administered by the U.S.

Department of Agriculture, Natural Resources Conservation Service, which would serve important Band environmental objectives by helping with Indiana's ongoing effort to restore the Grand Kankakee Marsh. Consequently, in February of 2002, the Band amended the trust land application to remove the North Liberty site in order to enroll 1,147 acres of the North Liberty site in the Wetland Reserve Program.

In 2007, the Band submitted a trust land application for the 313-acre portion of the North Liberty site that did not qualify for inclusion in the Wetland Reserve Program. In 2009, the Band withdrew the application upon concluding that the site was poorly suited for addressing the Band's housing, community and economic development, and other needs of the Band's Indiana citizens.

Finally, in 2011 the Band submitted a trust land application for housing, governmental offices, light commercial development, and other non-gaming purposes for fifteen parcels of land that encompass most of the present South Bend site. The Band also began a planning process to consider the option for a gaming development on land owned by the Band and located in Elkhart County, Indiana. The comparative analysis of options in this EIS helps BIA and the Band recognize that the location of the Elkhart site might not make it the best option to serve the Band's northern Indian population and the South Bend consolidation site. The Elkhart site may not adequately serve all of the Band's present needs for Band members living in the South Bend vicinity. The Band determined that it would be a feasible option to include gaming or other commercial projects in the Band's development plans for the South Bend site which, from the Band's perspective, would better satisfy the Band's immediate needs in Indiana. Based on these considerations, the Band withdrew its 2011 trust land application for the South Bend site and in 2012 filed the pending trust land application for the Preferred Alternative.

3.7.3.3 Pokagon Band's Present Need for Trust Land in Indiana

The Pokagon Band, as a sovereign federally recognized tribal government, has jurisdiction by law (40 C.F.R. § 1508.15) and special expertise (40 C.F.R. § 1508.26) regarding the needs of the Band and Band citizens for an inalienable trust land base to support the Band's provision of housing, community space, services and programs and employment and other socioeconomic opportunities. In this EIS, the Band has exercised its jurisdiction by law and special expertise to assist BIA with its determination of the purpose and need for the proposal for trust lands as described in Chapter 1 Purpose and Need. Further, the Band has helped BIA compare the relative impacts from each alternative in order to achieve the purpose and needs of Band citizens and the Band government.

The Pokagon Band has tribal government responsibilities for the public health and safety of its citizens, which is also a NEPA criteria for determinations regarding the significance of impacts under 40 C.F.R. §1508.27 (b)(2). In pursuit of the performance of its public health and safety responsibilities, the Band has a duty to help BIA determine the significance of impacts of the alternatives on Band socioeconomic needs, including housing, community space, Band programs

and services, and employment and other socioeconomic opportunities. The Band's underlying root need is that the Band must have an inalienable land base for the provision of its governmental services to Band members, much as the neighboring governmental entities need a land base from which they provide governmental services to their citizens. The Secretary of the Interior and BIA are authorized by the Congress and the President under the Pokagon Restoration Act and other federal law to review and approve the Band's and other tribal government applications for fee-to-trust acquisition. The Pokagon Band acquired the subject parcels of land in fee simple and the Secretary of the Interior delegated authority to BIA to approve the trust acquisition that results in the United States owning the subject parcels in trust status for the beneficial use of the Pokagon Band. This process, authorized by the Congress under the Pokagon Restoration Act, serves the objective of establishing an inalienable trust land base for the Pokagon Band to use for tribal government purposes.

The Band presently has no inalienable trust land in the State of Indiana. The Band needs the South Bend site to be taken into trust in order to establish an inalienable tribal land base in Indiana. A land base located in Indiana in proximity to the Band's Indiana residents will further enable the Band to pursue the goals of self-governance and self-determination, which are critical to ensuring that the Pokagon Band of Potawatomi Indians will endure as a sovereign tribal nation. In the Pokagon Restoration Act, Congress authorized the creation of a trust land base for the Pokagon Band and the Secretary of the Interior acknowledged in its MOU with the Band the appropriateness of creating a trust land base at the Band's South Bend consolidation site in St. Joseph County, Indiana.

3.7.3.4 Lands at Other Pokagon Band Consolidation Sites

Pokagon Band's trust lands at three existing consolidation sites located in Michigan are critical to some of the Pokagon Band members, but the trust lands located at the three Michigan consolidation sites cannot serve the Band's present purpose and need regarding the South Bend consolidation site.

Pokagon Band presently has approximately 3,204 acres of trust land located at the three consolidation sites in its Service Area within the State of Michigan (Berrien County–674; Cass County–1,755, which includes 320 acres in La Grange Township that were taken into trust in March of 2013; and Van Buren County–775 acres). The Pokagon Band's governmental headquarters are located at the Dowagiac Consolidation Site approximately five miles southwest of the City of Dowagiac, Michigan in Pokagon Township on the Band's Rodgers Lake property. The Rodgers Lake property includes a Head Start program facility, the Pokagon Band Tribal Court, and an Administration building that houses the Education, Elections, Enrollment, Human Resource, and Social Services departments.

The Pokagon Band Police Department, the Department of Natural Resources, and the Department of Language and Culture are housed in converted residential structures located on separate properties near the Rogers Lake property. The Pokagon Band Department of Health Services is located several miles northeast of the Rodgers Lake property on M-51 in two leased buildings. Finally, the Pokagon Band Housing Department is located on a mixed use site in La Grange Township approximately five miles from the Rodgers Lake property. At this site, the Band has thirty-four housing units, a Community Center, and an additional thirty-two units (sixteen duplex units and sixteen apartment units) under construction.

As of December of 2013, the Band had more than 4,800 citizens, 525 of which reside in Indiana. Of the Band's Indiana residents, 250 reside within 30 miles of the South Bend consolidation site and 332 reside within the Indiana portion of the service area. Table 3.7-1 shows the distribution of Band citizens by age cohort residing in Indiana.

Table 3.7-1

Pokagon Band Residents In Indiana

Residency	Age Cohort				Total
	0-17	18-29	30-54	55+	
St. Joseph County	102	44	55	32	233
Elkhart County	24	9	15	9	57
La Porte County	12	8	6	2	28
Starke Count	3	2	2	0	7
Marshall County	2	1	1	0	4
Kosciusko County	0	0	1	2	3
Within Service Area (Indiana)	143	64	80	45	332
Outside Service Area (Indiana)	96	45	36	16	193
Total Indiana	239	109	116	61	525

Source: Pokagon Band of Potawatomi Indians (2013)

With the exception of a satellite office on the South Bend site that opened in June of 2013, the more than 4,800 Band citizens, including the 525 Band citizens residing in Indiana, must access most Band programs and services and attend all community functions at the Dowagiac consolidation site in Cass County, Michigan. Outreach efforts and transportation services based at the Dowagiac consolidation site must reach Pokagon citizens, including ill, elderly, and other at-risk citizens, that reside throughout the six-county portion of the Band's Service Area in Indiana, encompassing 2,825 square miles. In addition, the Pokagon Band Department of Health Services and certain other Band programs that receive federal funding must service other Native Americans, provided that they reside within the Band's Service area and are enrolled in a federally-recognized Indian tribe. Table 3.7-2 shows the distribution of Native Americans residing in the Band's Service Area in Indiana.

Table 3.7-2

American Indian Population in Indiana

Residency	Total Population	American Indian Population*	American Indian, % of Total Population
St Joseph County	266,931	2,825	1.1%
Elkhart County	197,559	1,830	0.9%
La Porte County	111,467	886	0.8%
Starke County	23,363	209	0.9%
Marshall County	47,051	352	0.7%
Kosciusko County	77,358	525	0.7%
Service Area	723,729	6,627	0.9%
Indiana	6,483,802	49,738	0.8%

***** Race alone (American Indian) or in combination with one or more other races

Source: U.S Census Bureau, 2010

3.7.3.5 Pokagon Band Inventoried Member's Needs

In order to determine the needs and concerns of Band citizens, the Band conducted land use master planning for the South Bend site and other Band property under the requirements of Article IV of the Pokagon Band Constitution. The master planning process included several steps to identify the Band's current and future needs. First, basic site information was gathered about the South Bend and Elkhart sites, which included site environmental information and demographic and socio-economic information for the surrounding area. Second, the Band conducted two surveys of Band citizens that focused on the northern Indiana area. Third, inventories of Band citizen needs were compiled from the Housing Department, the Department of Social Services and other Band agencies and programs. Fourth, community meetings were held to collect Band citizen input, which included two "charrette" style meetings to facilitate direct input regarding development options on or near the South Bend consolidation site. Fifth, in 2012 the Band conducted a comprehensive Census of all Band citizens who were at least 18 years of age. Census packets were mailed to 2,745 Band citizens, 1,743 of whom completed and returned responses for a return rate of 65%. The Census included a section based on questions that were derived from the Indiana-focused surveys and charrettes. The census contains information about 2,903 Band citizens, which includes 1,160 minors.

The results of the land use master planning process indicated strong support and desire among the Band's Indiana community for mixed-use development of the South Bend site that would include residential, government, and commercial development. The Band concluded that trust acquisition of the South Bend site and the Band's mixed-use development plans for the site will address the specific unmet needs of Band citizens residing in Indiana, particularly those located in the vicinity of the South Bend consolidation site.

Citizen input from the land use master planning process was used to create a master plan for the South Bend site. Based on the master planning process, the Band proceeded with plans to develop a mixed-use "tribal village" in order to facilitate the re-establishment of a distinct Pokagon community residing in northern Indiana. The master planning process determined that the proposed tribal village needs the following components or uses: (a) approximately forty-four housing units, which are planned to be comprised of one twelve-unit apartment building, four duplex homes, and twenty-four single-family homes; (b) a multi-purpose facility to serve as a community gathering place; and (c) governmental office space, including health service offices and educational facilities.

The proposed development of the South Bend site will address four essential needs that were identified in the master planning process. First, the South Bend site will provide an inalienable tribal land base in Indiana and its proximity to the Band community residing in northern Indiana makes it a suitable location for the development of housing. The Band has a substantial unmet housing need in Indiana, which presents the Band with significant ongoing challenges in addressing the basic needs of the Band's Indiana residents. Over the sixteen month period from February of 2012 to December of 2013, Band citizenship increased from 4578 to over 4,800—a growth-rate of 4.85%, as compared to the 0.8% rate of growth for the State of Indiana and the zero growth-rate for the State of Michigan based on U.S. Census Bureau calculations for the similar time-period of April 2010 to July 2012. Since 2011, the number of Band citizens residing in Indiana grew from 458 to 525, nearly half of which live within thirty miles of the South Bend site. The median age for the Band population is approximately 23 years and approximately 40% of the Band's citizens are minors.

Between 2007-2012, 28 (approximately 6%) of the Band citizens residing in the Service Area in Indiana received Emergency Assistance from the Pokagon Band Housing Department, which limits eligibility to once every 5 years. Out of 37 Emergency Assistance applications received by the Pokagon Band Department of Social Services through 2013, 3 are from residents of the Service Area in Indiana. Table 3.7-4 presents data regarding the use of Pokagon Band housing services and assistance by the Band's Indiana residents. Participation by the Band's Indiana residents in available housing programs is generally proportional to the 10% share they represent of the Band population for the entire ten-county service area in Michigan and Indiana.

Table 3.7-3 presents several measurements of the socioeconomic status of Pokagon Band Indiana residents in comparison to the total Indiana population.

Table 3.7-3

Socioeconomic Data, Pokagon Band Indiana Residents

Socioeconomic Measurement		Pokagon Band Residents	Total Indiana Residents
Income Below Poverty ($11,720)*		34%	15.6%
No Health Insurance Coverage†		49%	12.7%
Home Ownership‡		44%	71.2%
Educational Attainment	High School Graduate or More	81%	86.6%
	Bachelor's Degree or More	17%	22.5%
	Advanced Degree or More	4%	8.1%

* Source: U.S. Census Bureau, 2012; Pokagon Band of Potawatomi Indians, 2012

† Source: U.S. Census Bureau, 2012; Pokagon Band of Potawatomi Indians, 2012

‡ Source: U.S. Census Bureau, 2010; Pokagon Band of Potawatomi Indians, 2012

¶ Source: U.S. Census Bureau, 2009; Pokagon Band of Potawatomi Indians, 2012

Table 3.7-4

Pokagon Band Indiana Service Area Residents Receiving Tribal Housing Assistance

Type of Assistance	Indiana Residents	Total in Program
Rental Assistance	9	94
Student Rental Assistance	3	84
Emergency Assistance	2	16
Transitional Housing	1	2
Down-Payment Assistance	4	19
Other Housing Assistance	2	13

Source: Pokagon Band of Potawatomi Indians, 2013

Collectively, this data indicates that a substantial number of Band citizens that head Pokagon households in the Indiana service area live in substandard housing or are significant challenges in their efforts to maintain adequate housing for their families. When taken into trust, the South Bend site will provide the Band with its first permanent land base in Indiana and a suitable for the Band to address the growing housing needs of the Band's northern Indiana community.

Second, the South Bend site will provide a suitable location for the Band to develop multi-use, community-focused spaces to meet an important need in its northern Indiana community for stronger community bonds, a greater sense of cultural and tribal identity, and to counter the socially destructive effects of poverty and assimilation. The development of a multi-use facility on the South Bend site will provide community space in close proximity to the proposed new housing on the site and the Band's northern Indiana community that will continue to reside off-site, which helps ensure that Band elders and other less mobile citizens will have opportunities to further integrate into Band community life.

Third, the South Bend site, which is located approximately twenty-three miles from the Band's Dowagiac consolidation site, is a suitable location for the Band to establish and maintain a northern Indiana point of delivery for tribal government programs and services to the Band's Indiana community. The South Bend site has adequate land for the development of modestly-sized Band government offices, including health services and satellite office space for various other Band government programs and service agencies. The Band's northern Indiana citizens are underserved and have a growing need for medical services, education, language training, and cultural enrichment.

In addition, at-risk individuals among Band citizens often have more urgent needs for programs and services. This presents special challenges due to travel distances and working on an intermittent basis in Indiana, with different service-delivery and regulatory requirements at the state and local level. For example, the Band's Department of Social Services is staffed with experienced child welfare specialists who, along with attorneys and Tribal Police, must be prepared to intervene on a moment's notice to address the needs of at-risk Pokagon Band children residing within the Band's expansive six-county service delivery area in Indiana. Under Section 8 of the Pokagon Restoration Act (25 U.S.C. § 1300j-7), the Band exercises exclusive jurisdiction over all child custody proceedings involving Pokagon Band children that reside within the Band's 10-county service area in Michigan and Indiana "as if the members were residing upon a reservation as defined in [the Indian Child Welfare Act of 1978]" (25 U.S.C. 1901 et seq.). The Band will continue to face significant difficulties in its effort to fulfill its jurisdictional responsibilities in child welfare and other social service matters in Indiana without an Indiana land base from which it can coordinate services and respond on short notice.

Pokagon Band Elders, particularly those with transportation or mobility issues or at any significant distance from the Dowagiac consolidation site, also present special needs that challenge the Band's staff and resources. The Pokagon Band provides a variety of benefits and services for its elders, which are integrated throughout Band government programs and services. Special focus on the needs of elders is provided by the Elders Council, an elected body established under the Pokagon Band constitution and Pokagon Band law, and by an Elder's Program, which is staffed by a full-time Elder's Specialist. In addition, the Pokagon Band Department of Health Services provides dedicated elder assistance and support services as well as home health visits, in-home assessments and referrals, and medical appointment transportation to serve the needs of elders. The Pokagon Band Housing Department provides special subsidized housing for elders and the Band's "Pokagonek Edawat" housing complex at the Dowagiac consolidation site. However, extending these programs and services to all of the Band's elders residing in Indiana presents a significant challenge that cannot be overcome simply with outreach and transportation services.

The South Bend site is also a suitable location for commercial development to provide employment opportunities for the substantial number of unemployed and underemployed Band citizens residing in northern Indiana. It will also generate revenue to help with the cost of development and Band

programs and services. According to Pokagon Band enrollment data for 2012, 170 Band citizens who reside in Indiana are between the ages of 16 and 64 years and would be considered part of the northern Indiana labor force. Among the 106 northern Indiana respondents to the Band's 2012 census, 44 Band citizens stated that they were unemployed, which indicates an unemployment rate of 42% for the Band's northern Indiana work force.

The projected 2,000 permanent jobs that would result from the proposed commercial gaming development would directly address the chronically high unemployment among the Band's northern Indiana residents. Pokagon Band law and policies promote the employment, retention, and advancement of Band citizens and the engagement of citizen-owned businesses by the Pokagon Band government and the Band's gaming enterprise. As of the fourth quarter of 2013, the Band government employed 175 people, 76 (43%) of whom were Pokagon citizens; the Band's gaming enterprise employed 2,200 people, more than 220 (10%) of which were Pokagon Band citizens. The Pokagon Band government addresses the employment and income disparity between the Pokagon Band community and the majority population by implementing employment and contracting preferences established by law in the Pokagon Band Employment and Contracting Preferences Code.

At the Band's gaming enterprise, Native American employment and contracting preferences are augmented by a highly successful "Tribal Development Program" for Pokagon Band citizens, which provides individualized assistance to help participants enter and remain in the workforce and advance to senior positions within the enterprise. Program services and benefits include:

- 100% tuition reimbursement to help participants achieve educational goals, such as obtaining a GED, a college degrees, and technical certificates (to date, over $290,000 has been paid for approximately 50 participants).

- Paid summer internships for participants that are enrolled full-time in an accredited educational institution. Of 35 interns over the past six years, 9 have retained employment with the enterprise, 4 of which are currently employed at a supervisory level or above, including 1 in a director level position.

- For select participants that demonstrate desire and aptitude –

    - professional and educational development opportunities and management training taught in-house by staff or by contracted professional trainers (e.g., leadership training, computer training, and supervisory training);

    - external training directly related to the participant's current department or a department of interest.

- Through a partnership between the enterprise and Michigan State University School of Hospitality Management, Pokagon employees with a Bachelor's Degree and at least two years of supervisory experience can be nominated to enter the MSU Master's program. If selected, the enterprise will pay for all of the participant's expenses, including tuition and housing, and the participant will continue to receive his or her yearly salary. Participants that complete the program are guaranteed a management level position upon returning to the enterprise. Currently there is 1 participant attending MSU's Master's degree program.

To date, over $2.6 million dollars has been spent for continued growth for program participants. In December of 2007, out of 220 Pokagon employees, 19 were employed at a lead level and above, including 2 directors. None were vice presidents. At the end of 2013, of the 220 Pokagon employees, 81 are employed at the Lead level and above, with 4 vice presidents, 8 directors, 32 managers, 23 supervisors, and 14 leads. Over the past 7 years, 338 Pokagon employees have been promoted or have transferred with an increase in pay. Pokagon employees occupy all of the management positions at the enterprise's satellite operations in Hartford and Dowagiac.

In addition, the anticipated revenues of a commercial gaming operation on the South Bend site would provide regular funding to assist the Band with the cost of providing job training and education to Band citizens to further reduce the level of unemployment. Revenues from the gaming operation will also be used to develop housing and other facilities on the South Bend site, to fund tribal government programs and services, and to fund the Band's efforts to restore its land base and rebuild Band homelands for future generations.

The proposed tribal village is consistent with and supports the local jurisdiction's long range planning goals. The suitability of the South Bend site for economic development is reflected in the City of South Bend Comprehensive Plan and the St. Joseph County–South Bend Comprehensive Plan, which identify the area in which the site is located as a growth area and a regional commercial node. Among the commercially-attractive attributes of the South Bend site are the availability of required infrastructure, convenient access from State Road 23 and U.S. Highway 31/20 and other major transportation routes, and its proximity to a sizeable market of 1.3 million people within a 50-mile radius of the proposed gaming facility.

3.7.3.6 Pokagon Band Needs Revenues for Governmental Services

The Pokagon Band also needs sources of revenue to construct and operate the tribal village and replenish reserve funds the Band accessed to pursue its very costly land acquisition initiative in northern Indiana. The estimated cost to develop 20 housing units in the first project phase – less than half of the proposed 44-unit development – is $3.4 million, excluding the cost to develop water, sewer, electric, gas and other infrastructure needed to serve the site. Annual operating costs for the 20-unit initial phase of development are estimated at $141,000 (Jim Coleman, pers. comm.). The estimated total annual cost to establish Indiana-based programs and services for the Indiana

service area is $8.884 million, which includes direct labor and fringe benefit costs, materials and supplies, travel and training, purchased services, overhead, and capital outlay, but excludes building and infrastructure costs (Anita Grivins, pers. comm.). This estimate is broken down by department/program as follows:

- Department of Health ($1.407 million). Health services would include general outpatient services and specialty services for advance disease management, dental services, podiatry services, and laboratory and radiology services. Some services that the Band is unable to provide may be made available to Band citizens through contracts with specialists and other third-party providers.

- Department of Social Services ($1.474 million). Services include child protection and child welfare, social services outreach, family services, victim services, foster care/adoption services, and young child wellness at levels that replicate the level of services provided to Michigan residents.

- Department of Education ($0.494 million). Education programs and benefits are provided from pre-K through adult learning in the form of scholarships, education supplies, assistance with tuition and fees, tutoring, and assessment testing.

- Department of Housing ($0.500 million). Funding will cover program costs, staffing and other housing benefits and services consistent with the housing program at the Dowagiac consolidation site and includes services needed to maintain the homes proposed for development.

- Law Enforcement and Courts ($0.800 million). Additional tribal police and judicial services will be needed to fulfill the new jurisdictional responsibilities.

- Gaming Commission ($1.325 million). Gaming regulatory services must be expanded to fulfill new responsibilities at the proposed gaming operation in Indiana under IGRA, the Pokagon Band Gaming Regulatory Act, and under any class III gaming compact that the State of Indiana may enter into with the Band.

- Department of Language & Culture ($0.212 million). Funding will allow the Band to extend critical language and cultural preservation and revitalization services to Indiana residents.

- Administrative Support Services ($2.672 million). Administrative support services, which are needed to serve the departments and programs and serve the tribal government, include legal services, communications, information technology, human resources, and finance and accounting.

Band revenues from federal programs, from its current gaming operations, which are leveraged with substantial debt service, and from other commercial operations in Michigan are inadequate to fund the Band's needs in Indiana as those revenues are needed to provide governmental services for the three existing consolidation sites in Michigan.

The Band has adequate experience and authority to consider a number of different kinds of commercial operations. By passing into law the Pokagon Restoration Act and the Indian Gaming Regulatory Act (Pub.L. 100–497, 25 U.S.C. § 2701 et seq.) of 1988, Congress and the President authorized the Secretary of the Interior and BIA to review and approve the Band's trust land application, which is needed in order for the Band to operate class II or class III gaming. IGRA is a 1988 United States federal law that first established the jurisdictional framework that currently governs Indian gaming in the United States. The stated purposes of the Act include providing a legislative basis for the operation/regulation of Indian gaming, protecting gaming as a means of generating revenue for the tribes, and encouraging economic development of these tribes.

By creating jobs for Band citizens and producing revenue for the Band government, the gaming operation will further an important Pokagon Band objective of achieving economic independence, consistent with long-standing federal policy in support of tribal self-determination. In enacting IGRA, the U.S. Congress found that "… a principal goal of Federal Indian policy is to promote tribal economic development, tribal self-sufficiency, and strong tribal government." 25 U.S.C. § 2701(4). Moreover, under IGRA profits from tribal gaming may only be used to fund tribal government operations and programs, provide for the general welfare of the Indian tribe and its members, promote economic development, donate to charitable organizations, and/or help fund operations of local government agencies. 25 U.S.C. § 2710(b)(2)(B).

Based on its experience with evaluating options for three gaming locations in Michigan, the Band has developed a level of expertise in evaluating suitable market locations for conducting gaming operations in order to produce more jobs and generate greater revenues than may be generated by other commercial operations that the Band has attempted. But, for purposes of comparative evaluation, this EIS contains a range of alternatives that include both gaming and non-gaming options.

The Band arranged for a qualified firm to conduct a market analysis for commercial gaming facilities, which determined that an operation that includes 3,000 slot machines, 75 table games, 500 hotel rooms, and several restaurants and other amenities would be feasible at the South Bend consolidation site. The gaming operation is projected to produce approximately 2,000 permanent jobs. For purposes of facilitating comparative analysis, a gaming alternative of similar scope and size will also be considered for the Elkhart site.

3.7.3.7 Pokagon Band Needs Trust Lands for Access to Federal Resources

Trust status for the Band's lands in the South Bend consolidation site would help authorize the Band's access to a number of major federal programs established to meet the needs of Indian country, including reservation housing programs available under the Native American Housing Assistance and Self-Determination Act of 1996 ("NAHASDA," 25 U.S.C. § 4101 et seq.), contracting and compacting opportunities under the Indian Self-Determination and Education Assistance Act of 1975 ("ISDEAA," 25 U.S.C. § 450 et seq.), and the Indian Reservation Roads program under the Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users ("SAFETEA-LU," 23 U.S.C. § 101 et seq.). Although the Band opened a satellite office on the South Bend site in June of 2013, until the site is taken into trust the Band can only offer a limited range of tribal services and programs from federal sources.

3.8 RESOURCE USE PATTERNS

3.8.1 Transportation Networks

Relevant data were collected to assess existing traffic conditions in the vicinity of the South Bend and Elkhart Project Sites. Lane configurations, traffic controls, and peak period traffic counts were obtained. These data were used to determine current traffic characteristics and trends, which were then subsequently used to project and analyze future conditions. Analyzed roads include both county roads in South Bend and Elkhart which would be under the jurisdiction of the respective counties and state roads which would be regulated by Indiana Department of Transportation (INDOT).

3.8.1.1 Existing Circulation Network

The Proposed Action would occur at one of two locations: the South Bend Site or the Elkhart Site. The following provides a description of the existing roadway network at each of the sites.

South Bend Site

Streets and highways in the South Bend site vicinity include State Route (SR) 23, Ireland Road, Mayflower Road, New Energy Drive, Prairie Avenue, Locust Road, Ewing Avenue, and United States (US) Route 31/US 20-St. Joseph Valley Parkway. The intersections of SR-23 with New Energy Drive, Prairie Avenue, Locust Road, and Ewing Avenue are all located within the South Bend city limits. The remaining intersections are located within St. Joseph County. All roadways are under the jurisdiction of St. Joseph County, except for SR-23 and US 31/US 20, which are under the jurisdiction of INDOT. **Figure 3.8-1** illustrates the existing roadway network; **Figure 3.8-2** illustrates the existing lane configurations. The project site is located in the east quadrant of the interchange of SR-23 with US 31/US 20, and is bounded to the east by Locust Road, to the north by SR-23 and the Prairie Avenue residential development, and to the south and west by US 31/US 20.

State Route 23 is a two-lane roadway that runs northeast-southwest from Mayflower Road to Ewing Avenue. The roadway has a functional classification of Minor Arterial south of the study area up to the interchange, at which point its classification changes to Principal Arterial before entering the City of South Bend (INDOT 2013). Near the interchange with US 31/US 20, the roadway widens to provide two lanes for each direction with a narrow concrete median from 1,200 feet west of the eastbound ramps to approximately 1,000 feet east of the westbound ramps. The posted speed limit along SR-23 is 45 miles per hour (mph) from Mayflower Road to Locust Road/ S. Olive Street, and 35 mph from Locust Road/ S. Olive Street to Ewing Avenue. SR-23 is uncontrolled at its intersections with Ireland Road, the US 31/20 eastbound and westbound ramps, New Energy Drive, Prairie Avenue and Ewing Avenue. Traffic signals are provided at intersections with Mayflower Road and Locust Road/S. Olive Street. Right and left turn lanes are provided at the US 31/20-SR-23 interchange and intermittently at driveways and minor intersecting roadways along the route. SR-23 provides twelve-foot lanes with no sidewalks or bike lanes.

Mayflower Road is a two-lane Minor Arterial roadway that runs north-south and connects with SR-23 at a signalized intersection (INDOT 2013). This intersection is an actuated signal with a cycle length of eighty seconds. The posted speed limit along Mayflower Road is 40 mph north of SR-23, and 30 mph south of SR-23. Mayflower Road provides twelve-foot lanes with no sidewalks or bike lanes.

Ireland Road is a two-lane Minor Arterial roadway that the runs east-west and connects with SR-23 at an unsignalized, stop sign-controlled intersection; Ireland Road also connects with Locust Road at a signalized intersection (INDOT 2013). The posted speed limit is 55 mph at the SR-23 intersection, and as Ireland Road approaches Locust Road, the posted speed limit is reduced to 45 mph. Ireland Road provides twelve-foot lanes with no sidewalks or bike lanes.

Ewing Avenue is a two-lane Minor Arterial roadway that runs east-west and connects with SR-23 under two-way stop control (INDOT 2013). The posted speed limit on Ewing Avenue is 30 mph. Ewing Avenue provides 20-foot lanes that accommodate parallel on-street parking. Sidewalks are present on both sides of Ewing Avenue west of the SR-23 intersection.

Locust Road is a two-lane Major Collector that runs north-south from Ireland Road to Ewing Avenue, where it then becomes a two-lane Minor Arterial and the name changes to South Olive Street (INDOT 2013). Locust Road connects with both Ireland Road and SR-23 at signalized intersections with cycle lengths of seventy and sixty-eight seconds, respectively. The posted speed limit on Locust Road is 40 mph from Ireland Road to SR-23, and 30 mph from SR-23 to Ewing Avenue. Locust Road provides 12-foot lanes with sidewalks on both sides of the roadway which extend from the Ireland Road intersection to the US 31/20 overpass. At the SR-23 intersection, sidewalks are provided on both sides of the road and extend about 4,000 feet south of the intersection.

New Energy Drive is a two-lane Local Roadway that runs north-south and terminates at its intersection with SR-23 under stop control (INDOT 2013). The posted speed limit on New Energy Drive is 30 mph, and the roadway provides 12-foot lanes.

Prairie Avenue is a two-lane Local Roadway providing the only access route to an apartment/ condominium development (INDOT 2013). The roadway runs north-south and terminates at its intersection with SR-23 under stop control. Prairie Avenue has a posted speed limit of 25 mph and has twelve-foot lanes.

United States 31/US 20 is a four-lane Divided Expressway that runs northwest-southeast (INDOT 2013). US 31/US 20 intersects with SR-23 at a diamond interchange. The posted speed limit is 65 mph. US 31/US 20 has twelve-foot lanes with ten-foot shoulders.

Elkhart Site

Streets and highways in the Elkhart site vicinity include SR-19, County Road 26, County Road 28, County Road 7, and US 20. US 20 and SR-19 are under the jurisdiction of INDOT, whereas the three county roadways are under the jurisdiction of Elkhart County. **Figure 3.8-3** illustrates the existing roadway network and **Figure 3.8-4** illustrates the existing lane configurations. The project site is located in the southeast quadrant of County Road 26 and SR-19, and is bounded to the east by County Road 7 and to the south by County Road 28.

State Route 19 is a north-south roadway classified as a Minor Arterial south of County Road 26, and its classification changes to Principal Arterial north of County Road 26 (INDOT 2013). SR-19 widens to four lanes approximately one quarter mile south of the signalized intersection at County Road 26. North of County Road 26, SR-19 is a divided roadway with a narrow concrete median beginning approximately 1,200 feet south of the US 20 eastbound ramps and ending approximately 1,300 feet north of the westbound ramps. SR-19 provides five lanes (three northbound and two southbound lanes) to accommodate the free flow merging traffic from eastbound US 20 to the westbound ramps. SR-19 is uncontrolled at its intersections with County Road 28 and US 20 eastbound ramps. Traffic signals are provided at the US 20 westbound ramps and County Road 26 intersection. Right and left turn lanes are provided at the US 20-SR-19 interchange ramps. SR-19 has a posted speed of 55 mph south of County Road 26 and a 45 mph posted speed north of County Road 26. SR-19 provides twelve-foot lanes with no sidewalks or bike lanes.

County Road 26 is a two-lane Major Collector roadway that runs east-west and connects with SR-19 at a signalized intersection (with a 140 second cycle length), and with County Road 7 under stop-control (INDOT 2013). The SR-19 and County Road 26 intersection has protected phases for all left turn movements. County Road 26 between SR-19 and County Road 7 becomes a four-lane divided Collector with a raised median separating east and westbound traffic. Right and left turn lanes are provided intermittently along this segment of roadway. The posted speed limit is 45 mph. County Road 26 has twelve-foot lanes with no sidewalks or bike lanes.

County Road 28 which runs east-west is a two-lane Major Collector roadway west of SR-29 (INDOT 2013). County Road 28 between SR-19 and County Road 7 is a two-lane Local Roadway and connects with County Road 7 at a stop-control intersection. The posted speed limit is 55 mph. County Road 28 has twelve-foot lanes with no sidewalks or bike lanes.

County Road 7 runs north-south and is a two-lane Local Roadway between County Road 28 to County Road 26. North of County Road 26, County Road 7 becomes a two-lane Major Collector (INDOT 2013). The posted speed limit is 55 mph. County Road 7 has eleven-foot lanes with no sidewalks or bike lanes.

United States 20 is a four-lane Divided Expressway that runs northeast-southwest (INDOT 2013). US 20 intersects with SR-19 in a four-quadrant five-ramp partial clover interchange with the westbound US 20 loop in the southeast quadrant. The posted speed limit is 65 mph. US 20 has twelve-foot lanes with 10-foot shoulders.

3.8.1.2 Peak Hour Volumes

South Bend Site

Peak hour manual turning movement counts were performed on site on January 22-24, 2013 during the morning from 6:00 AM to 9:00 AM and during the afternoon from 3:00 PM to 6:00 PM at the following intersections:

- SR-23 at Ireland Road
- SR-23 at US 20 (Eastbound Ramps)
- SR-23 at US 20 (Westbound Ramps)
- SR-23 at New Energy Drive
- SR-23 at Prairie Avenue
- SR-23 at Locust Road
- SR-23 at Ewing Avenue
- Ireland Road at Locust Road
- SR-23 at Mayflower Road

Based on the data collection, it was determined that the AM and PM peak hours were different at each intersection. The peak hours for each intersection are listed below. See **Appendix F** for detailed intersection counts.

- SR-23 at Ireland Road – AM – 7:15-8:15, PM – 5:00-6:00
- SR-23 at US 20 (Eastbound Ramps) – AM – 7:30-8:30, PM – 5:00-6:00
- SR-23 at US 20 (Westbound Ramps) – AM – 7:30-8:30, PM – 5:00-6:00

- SR-23 at New Energy Drive – AM – 7:15-8:15, PM – 4:30-5:30
- SR-23 at Prairie Avenue – AM – 7:15-8:15, PM – 4:30-5:30
- SR-23 at Locust Road – AM – 7:15-8:15, PM – 3:15-4:15
- SR-23 at Ewing Avenue – AM – 7:15-8:15, PM – 4:45-5:45
- Ireland Road at Locust Road – AM – 7:15-8:15, PM – 4:45-5:45
- SR-23 at Mayflower Road – AM – 7:00-8:00, PM – 4:45-5:45

The existing weekday AM and PM peak hour traffic volumes for the studied intersections are shown in **Figure 3.8-5**. Traffic volumes were balanced between interchange ramp intersections using the highest observed volumes in order to provide a conservative analysis. Traffic volumes at other intersections were not adjusted.

Road segment Average Daily Traffic (ADT) volumes or tube counts were collected to determine the volumes of daily traffic that currently pass near the project area along the adjacent roadways. Tube counts were collected at the following segments and detailed in **Appendix F**:

- SR-23 between US 31/20 and New Energy Drive
- SR-23 between Locust Road and Ewing Avenue
- Locust Road between Ireland Road and SR-23

Elkhart Site

Peak hour manual turning movement counts were performed on site on January 16-18, 2013 during the morning from 6:00 AM to 9:00 AM and during the afternoon from 3:00 PM to 6:00 PM at the following intersections:

- SR-19 at County Road 28
- SR-19 at County Road 26
- SR-19 at US 20 (Eastbound Ramps)
- SR-19 at US 20 (Westbound Ramps)
- County Road 28 at County Road 7
- County Road 26 at County Road 7

Based on the data collection, it was determined that the AM and PM peak hours were different at each intersection. The peak hours for each intersection are as listed. See **Appendix F** for detailed intersection counts.

- SR-19 at County Road 28 – AM – 7:15-8:15, PM – 4:30-5:30
- SR-19 at County Road 26 – AM – 7:00-8:00, PM – 4:30-5:30
- SR-19 at US 20 (Eastbound Ramps) – AM – 7:15-8:15, PM – 4:15-5:15

- SR-19 at US 20 (Westbound Ramps) – AM – 7:30-8:30, PM – 4:45-5:45
- County Road 28 at County Road 7– AM – 7:15-8:15, PM-4:00-5:00
- County Road 26 at County Road 7– AM – 7:15-8:15, PM-3:30-4:30

The existing weekday AM and PM peak hour traffic volumes for the studied intersections are shown in **Figure 3.8-6**. Traffic volumes were balanced between interchange ramp intersections using the highest observed volumes in order to provide a conservative analysis. Traffic volumes at other intersections were not adjusted.

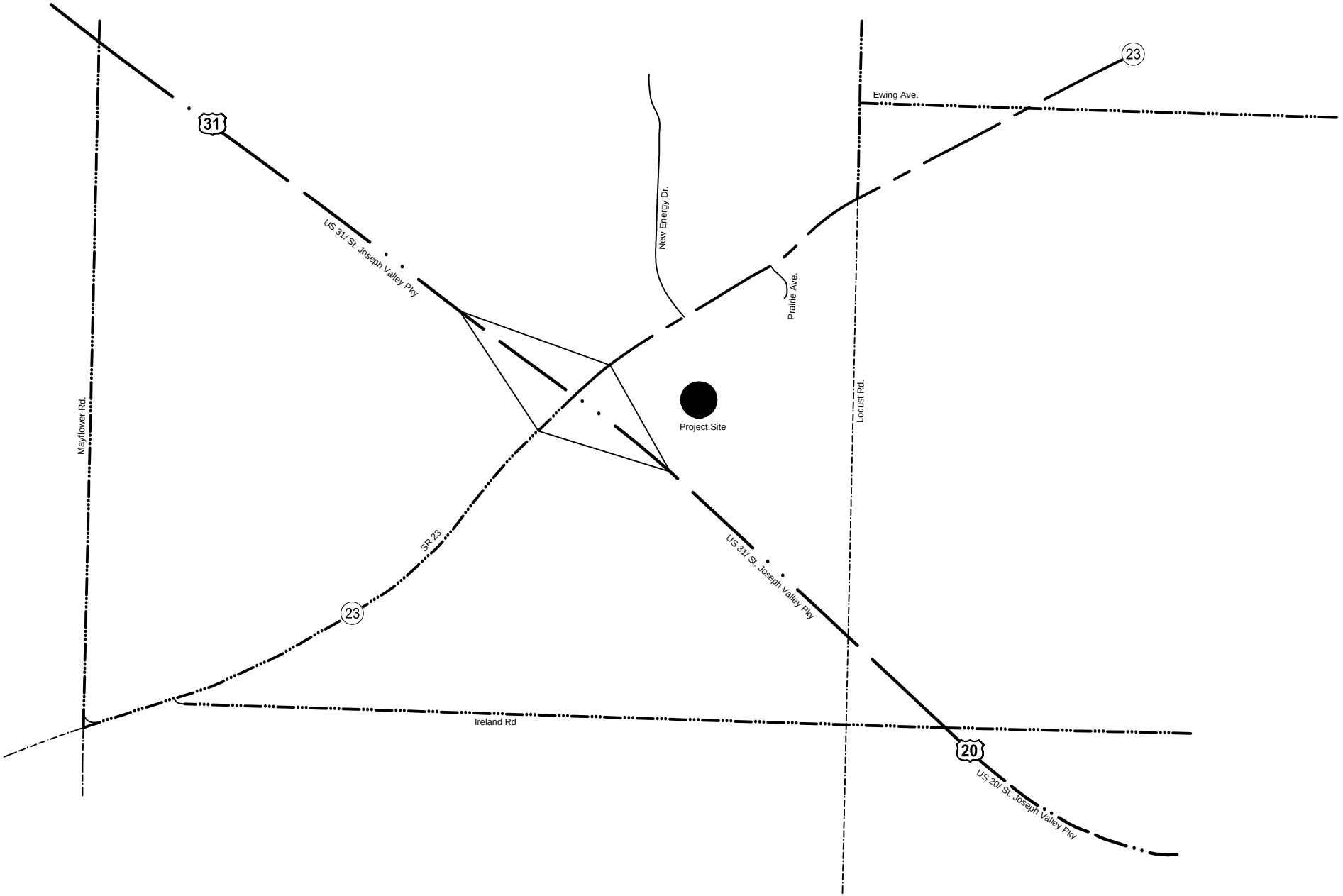
Road segment ADT volumes (tube counts) were collected to determine the volume of daily traffic that currently passes the project area along the adjacent roadways. Tube counts were collected at the following segments and the results are located in **Appendix F**:

- SR-19 between US 20 and County Road 26
- SR-19 between County Road 28 and County Road 26
- County Road 26 between SR-19 and County Road 7
- County Road 28 between SR-19 and County Road 7
- County Road 7 between County Road 28 and County Road 26

3.8.1.3 Peak Hour Intersection Performance

The primary Measure of Effectiveness (MOE) for the analyses conducted in this study is the performance of the intersections, lane groups, and approaches measured in average vehicular delay. A lane group is a single movement or a group of movements which describe all traffic movements that may occur on an intersection approach based on the intersection geometry.

The methods for measuring average vehicular delay, commonly referred to as intersection capacity analyses, were developed by the Transportation Research Board and published in the Highway Capacity Manual (HCM 2010). SYNCHRO, software from Trafficware (Version 7, Build 739), was selected to perform the capacity analyses for the intersections and scenarios listed previously under the typical weekday AM and PM peak hours. SYNCHRO implements HCM analysis methodologies, which assign a Level of Service (LOS) based on the average delay experienced by vehicles according to lane group, intersection approach, and overall intersection. Level of Service is a qualitative MOE of the operation of roadways and intersections. Several variables that affect the quality of traffic flow include speed, travel time, vehicular delays, traffic interruptions, and freedom to maneuver. To an automobile driver, a worsening LOS is perceived as greater delay due to waiting through signal light cycles and conflicts in turning movements.



LEGEND

- Divided Expressway (4 lanes)
- Principal Arterial (4 lanes)
- Minor Arterial (2 lanes)
- Major Collector (2 lanes)
- Local Roadway (2 lanes)

Figure 3.8-1: Existing Roadway Network
(South Bend Site)

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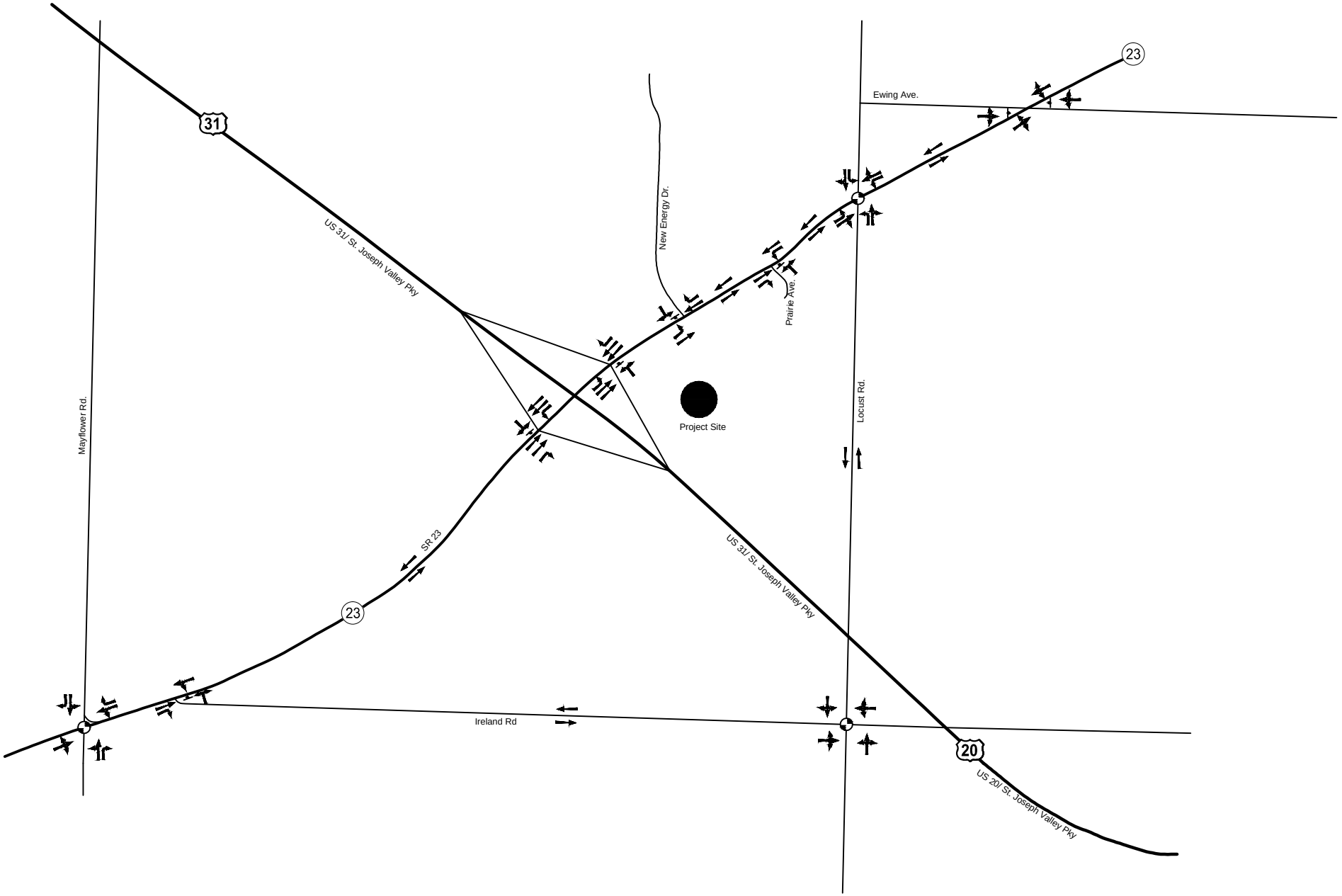

LEGEND

- Existing Lanes
- Existing Traffic Signal
- Existing Stop Sign

Figure 3.8-2: Existing Lane Configurations (South Bend Site)

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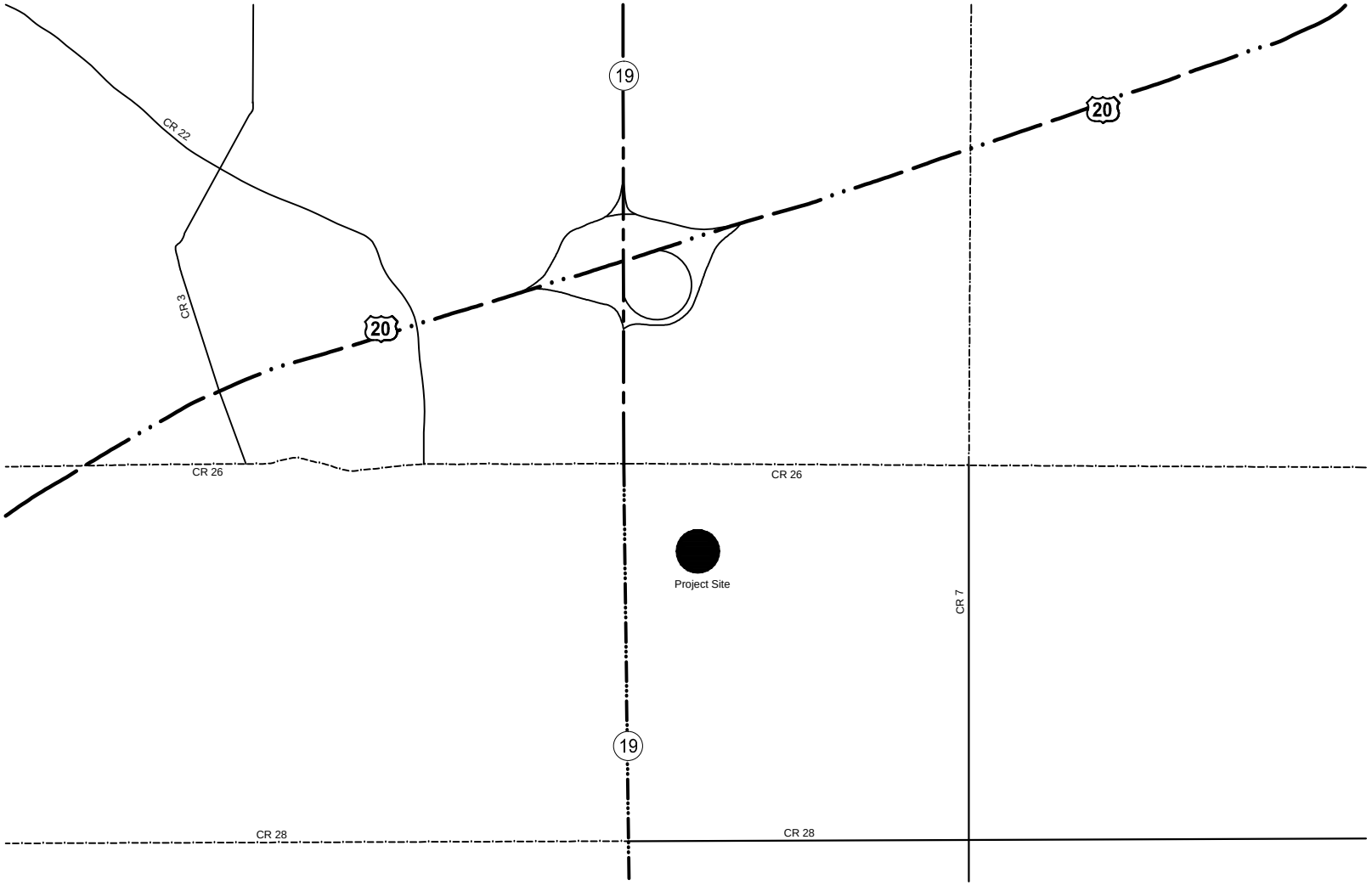

LEGEND

- Divided Expressway (4 lanes)
- Principal Arterial (4 lanes)
- Minor Arterial (2 lanes)
- Major Collector (2 lanes)
- Local Roadway (2 lanes)

Figure 3.8-3 Existing Roadway Network
(Elkhart Site)

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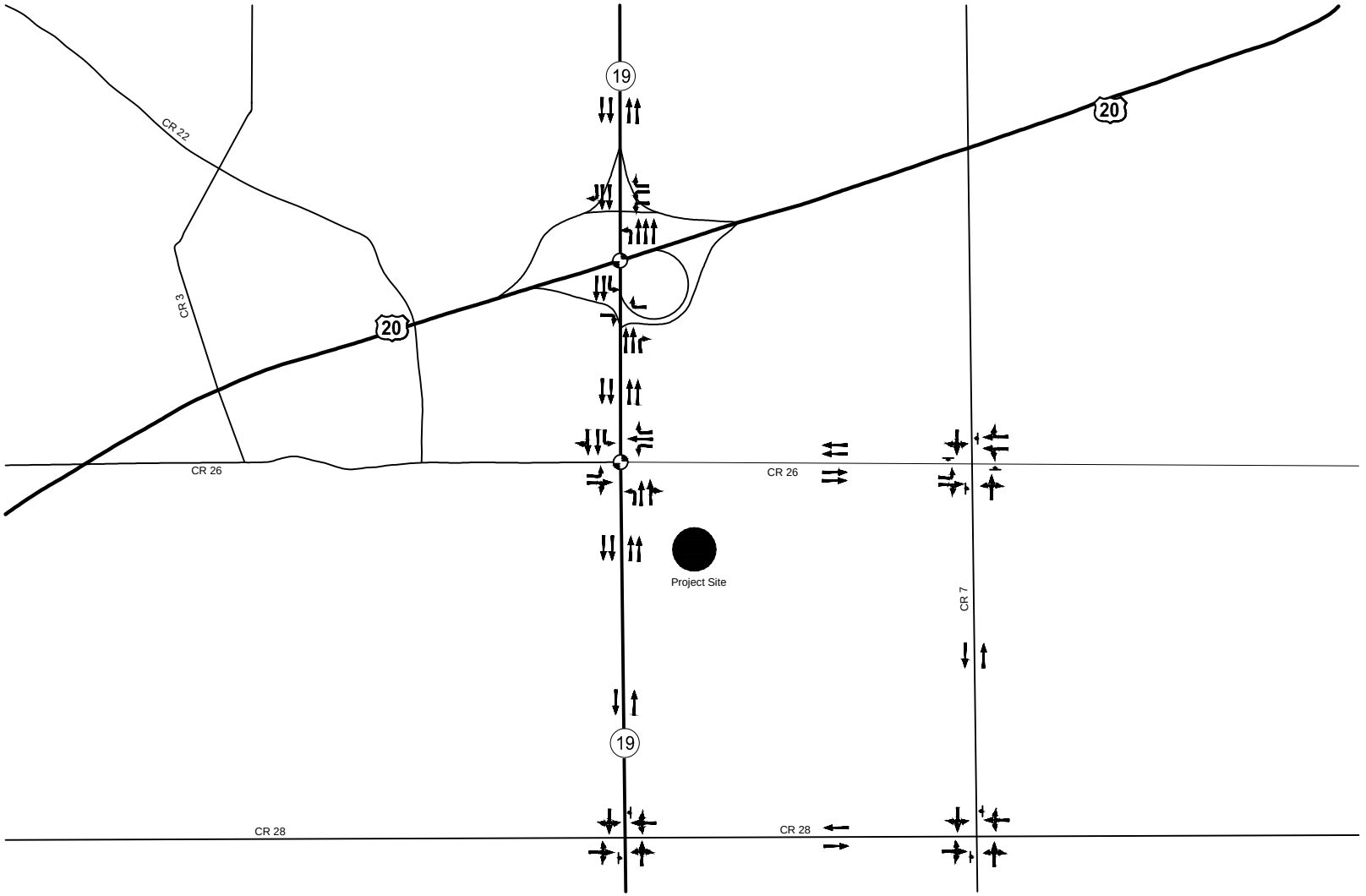

LEGEND

- Existing Lanes
- Existing Traffic Signal
- Existing Stop Sign

Figure 3.8-4: Existing Lane Configurations
(Elkhart Site)

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Table 3.8-1 illustrates the LOS categories presented in the HCM, and describes the related conditions of roadway operations from a driver's standpoint. Note that intersections controlled by stop signs have different delay thresholds (measured in seconds per vehicle [Sec/Veh]) for assigning LOS than intersections controlled by traffic signals.

Table 3.8-1
Level of Service (LOS) Definitions[1]

LOS	Stop Delay (Sec/Veh)	Signal Delay (Sec/Veh)	Quantitative Description
A	≤10	≤10	Defined as free flow traffic conditions with very low delay intersections.
B	>10 and ≤15	>10 and ≤20	Refers to reasonably unimpeded traffic operations with only short traffic delays at intersections.
C	>15 and ≤25	>20 and ≤35	Describes stable operating conditions with average traffic delays at intersections.
D	>25 and ≤35	>35 and ≤55	Illustrates operating conditions resulting in lower travel speeds and higher delay at intersections.
E	>35 and ≤50	>55 and ≤80	Represents conditions when travel speeds are substantially restricted with problems likely to occur at intersections.
F	>50	>80	Defined as conditions where roadways operations are over capacity with extreme delays that may be countered using mitigation.

Source: HCM (2010).

Delay times are given a letter designation of "A" to "F" ("A" being the best and "F" being the worst). Typically, the minimum LOS accepted by the INDOT for design purposes is LOS "D". Certain movements are permitted to operate along a minor street at a LOS below D in order to accommodate the traffic along the main traffic stream.

The existing conditions were modeled in SYNCHRO using the weekday AM and PM peak hour traffic counts, existing intersection configurations and traffic control determined from field visits, and traffic signal timing parameters provided by INDOT and county engineers (Russell Miller, pers. comm.) (Andrew Hayes, pers. comm.) (Phillip Gralik, pers. comm.). **Table 3.8-2** and **Table 3.8-3** summarize the existing peak hour overall intersection operations for the South Bend and Elkhart sites, respectively. **Figures 3.8-5 and 3.8-6** show the weekday existing AM and PM peak hour traffic volumes for South Bend and Elkhart, respectively. Signal timing permits and HCM reports are located in **Appendix F**.

Table 3.8-2
Existing Peak Hour Intersection Conditions (South Bend Site)

Intersection	Average Intersection Delay (sec.)	Level of Service
Weekday AM Peak Hour		
SR-23 at Mayflower Rd.	11.2	B
SR-23 at Ireland Rd.	14.0	B
SR-23 at EB US 31/US 20	16.5	C
SR-23 at WB US 31/US 20	16.2	C
SR-23 at New Energy Dr.	18.6	C
SR-23 at Prairie Ave.	15.5	C
SR-23 at Locust Rd.	11.8	B
SR-23 at Ewing Ave	34.1	D
Ireland Rd. at Locust Rd.	11.3	B
Weekday PM Peak Hour		
SR-23 at Mayflower Rd.	9.3	A
SR-23 at Ireland Rd.	16.7	C
SR-23 at EB US 31/US 20	21.9	C
SR-23 at WB US 31/US 20	14.2	B
SR-23 at New Energy Dr.	12.6	B
SR-23 at Prairie Ave.	11.4	A
SR-23 at Locust Rd.	10.5	B
SR-23 at Ewing Ave	26.0	D
Ireland Rd. at Locust Rd.	13.2	B

The following lane groups at each intersection operate at LOS E or worse under existing traffic conditions:

South Bend Site

- No lane groups operating at failing LOS

Elkhart Site

- SR-19 at County Road 28 – Eastbound Left/Thru/Right, PM – E/49.1 sec.

Table 3.8-3
Existing Peak Hour Intersection Conditions (Elkhart Site)

Intersection	Average Intersection Delay (sec.)	Level of Service
Weekday AM Peak Hour		
SR-19 at CR 28	33.3	D
SR-19 at CR 26	20.2	C
SR-19 at EB US 20	11.2	B
SR-19 at WB US 20	11.8	B
CR 26 at CR 7	9.1	A
CR 28 at CR 7	10.1	B
Weekday PM Peak Hour		
SR-19 at CR 28	49.1	E
SR-19 at CR 26	18.5	C
SR-19 at EB US 20	11.4	B
SR-19 at WB US 20	9.1	A
CR 26 at CR 7	9.2	A
CR 28 at CR 7	10.4	B

3.8.1.4 Conclusions

The existing conditions intersection capacity analyses indicate that all intersections at both the South Bend site and the Elkhart site currently operate acceptably during the weekday AM and PM peak hours. Furthermore, only one lane group, the shared eastbound left/thru/right lane at SR-19 and County Road 28, operates poorly under the existing conditions. The analyses indicate that there is little congestion or delay for the average motorist at either study site.

3.8.2 Land Use

Regional and site specific land use data was gathered from various sources including the respective counties and the Census Bureau. Specific parcel data came from ALTA/ACSM land and title surveys completed by Wightman and Associates, Inc.

3.8.2.1 Regional Setting

South Bend Site

In 2011, St. Joseph County's population was approximately 266,700 people (US Census Bureau 2013b). The County consists of ten incorporated cities and towns and many unincorporated areas. St. Joseph is the fourth largest county in the state of Indiana (St. Joseph County 2013). The proposed property is located in South Bend, Indiana. In 2010, the City of South Bend's population was

101,170, which represents a 6.5 percent decline in population since the 2000 census (US Census Bureau 2013b).

Based on the South Bend Zoning area plan of June 2011, land use planning for parcels on this site are currently zoned as "Single Family and Two Family District." Parcels adjacent to the South Bend site are zoned as business, industrial, and residential districts. The South Bend Zoning Map in located in **Appendix F**. Land coverage based on the National Land Cover Dataset dated 2011 depicts the area as a combination of natural grasslands, wetlands and forest (USDA NRCS 2013). **Figure 3.8-7** shows the site location just outside of the densely developed regions of the city.

Elkhart Site

Elkhart County's population was approximately 198,941 in 2011 (US Census Bureau 2013a). The county consists of ten incorporated cities and towns and multiple unincorporated areas. Elkhart County was experiencing rapid growth over the past several decades until 2007 from the growing recreational vehicle manufacturing industry in the area.

Land use planning for the Elkhart site is zoned by the County of Elkhart as agricultural (Deb Britton, pers. comm.). Land cover based on the National Land Cover Dataset dated 2011 depicts this area as a natural grassland (USDA NRCS 2013). **Figure 3.8-8** shows the site location just south of the densely developed regions of the City of Elkhart.

3.8.2.2 Project Area

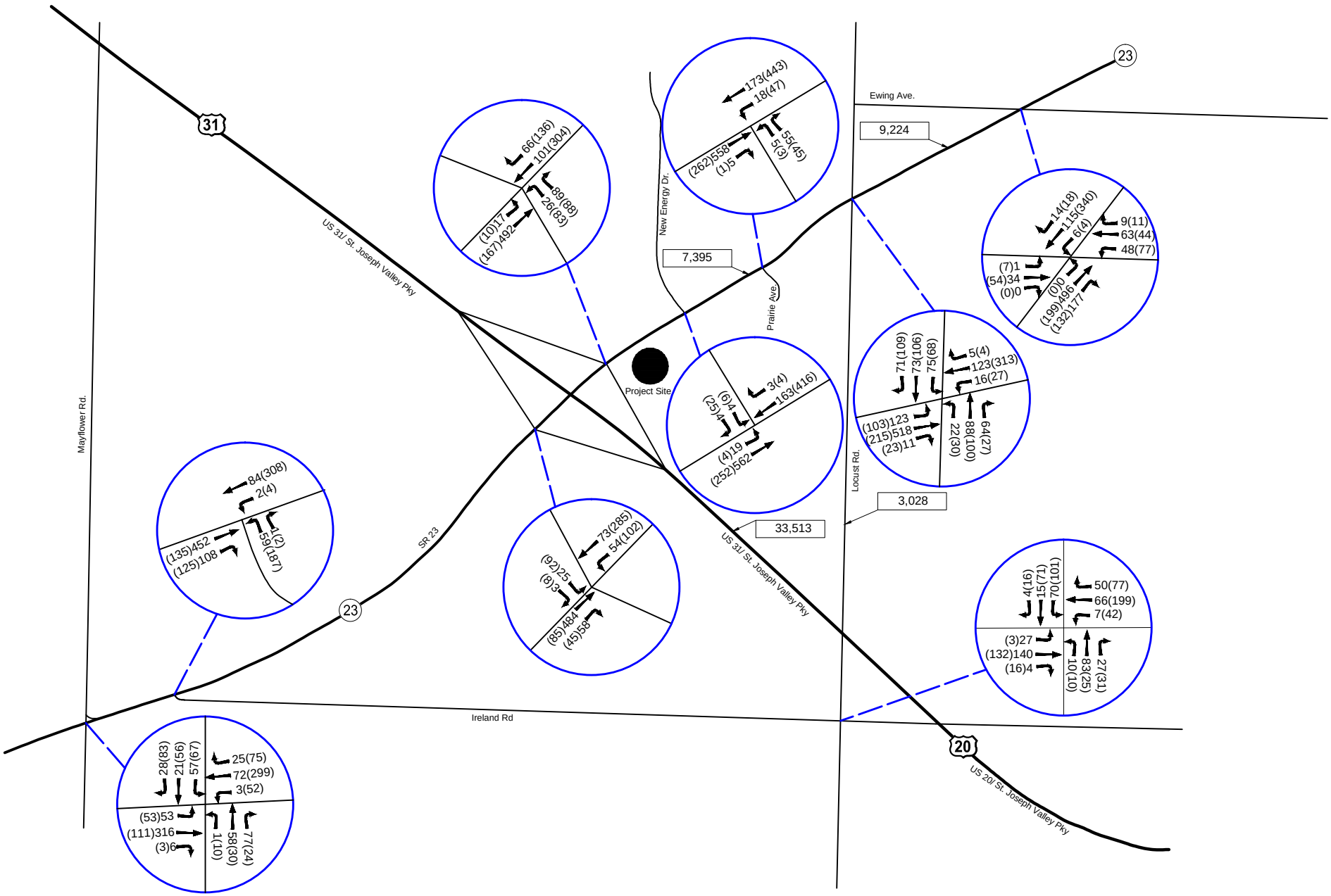
South Bend Site

The South Bend Site consists of eighteen contiguous parcels of land totaling ±165.81 acres. These parcels are part of the fee-to-trust application and are currently owned by the Band. The site land uses are dominated by undeveloped woodlands and open meadow with no commercial use and no active agricultural use. There are five residential structures located on the property, all of which are habitable.

Of the 18 parcels that make up the South Bend property site, 16 parcels would be impacted for both Alternatives A and C because they are within the construction limits of the proposed tribal development. **Figure 3.8-9** shows the parcel outlines and the proposed construction limits for both Alternatives A and C.

Elkhart Site

The Elkhart Site consists of two parcels totaling 171.82 acres and is currently owned by the Band. The site and surrounding parcels' land use are primarily agricultural in nature.



LEGEND

XX — AM Peak Hour Volumes

(XX) — PM Peak Hour Volumes

ADT — Average Daily Traffic

Figure 3.8-5: Existing Peak Hour Traffic Volumes (South Bend Site)

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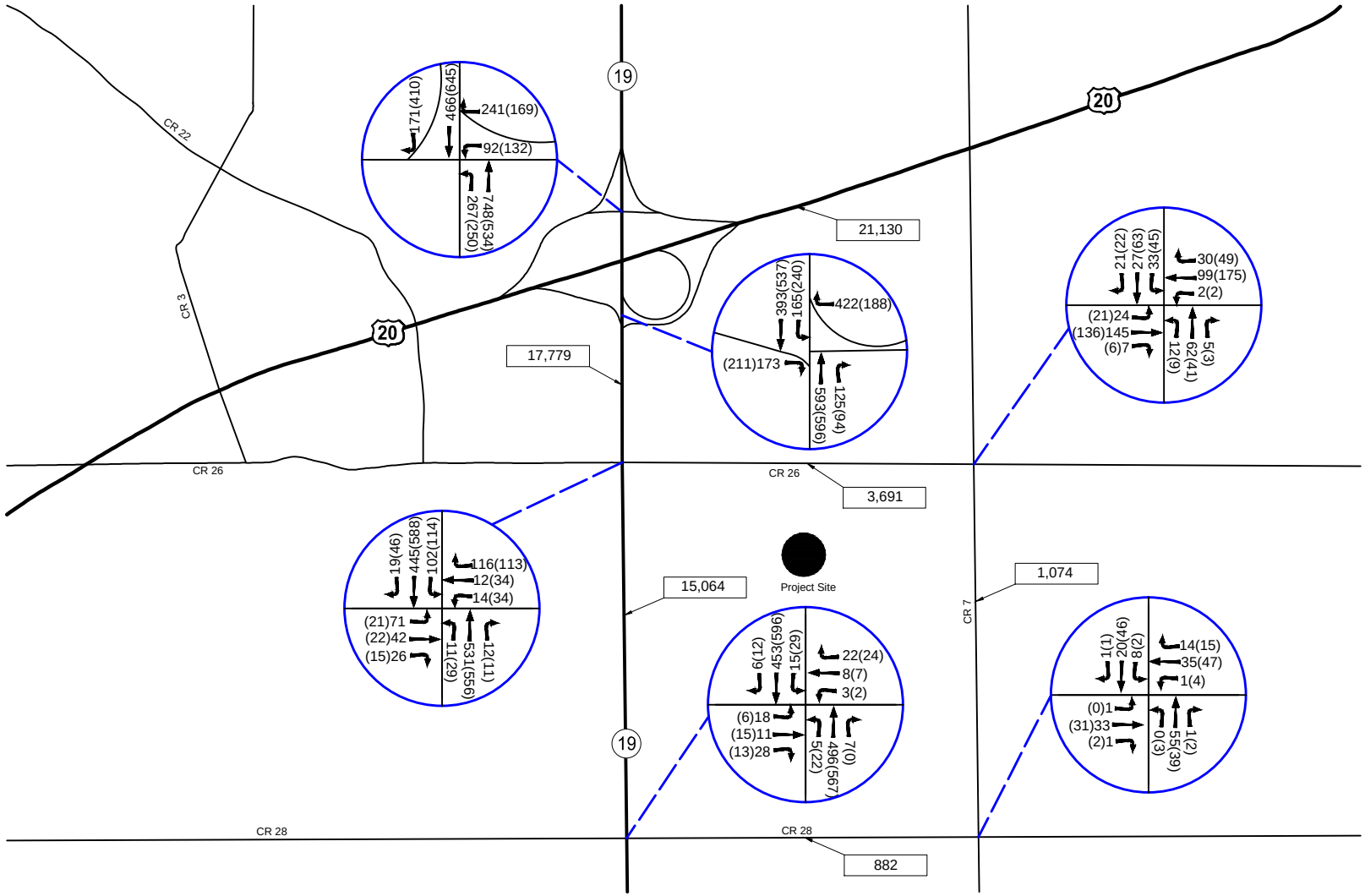

LEGEND

XX	AM Peak Hour Volumes
(XX)	PM Peak Hour Volumes
ADT	Average Daily Traffic

Figure 3.8-6: Existing Peak Hour Traffic Volumes (Elkhart Site)

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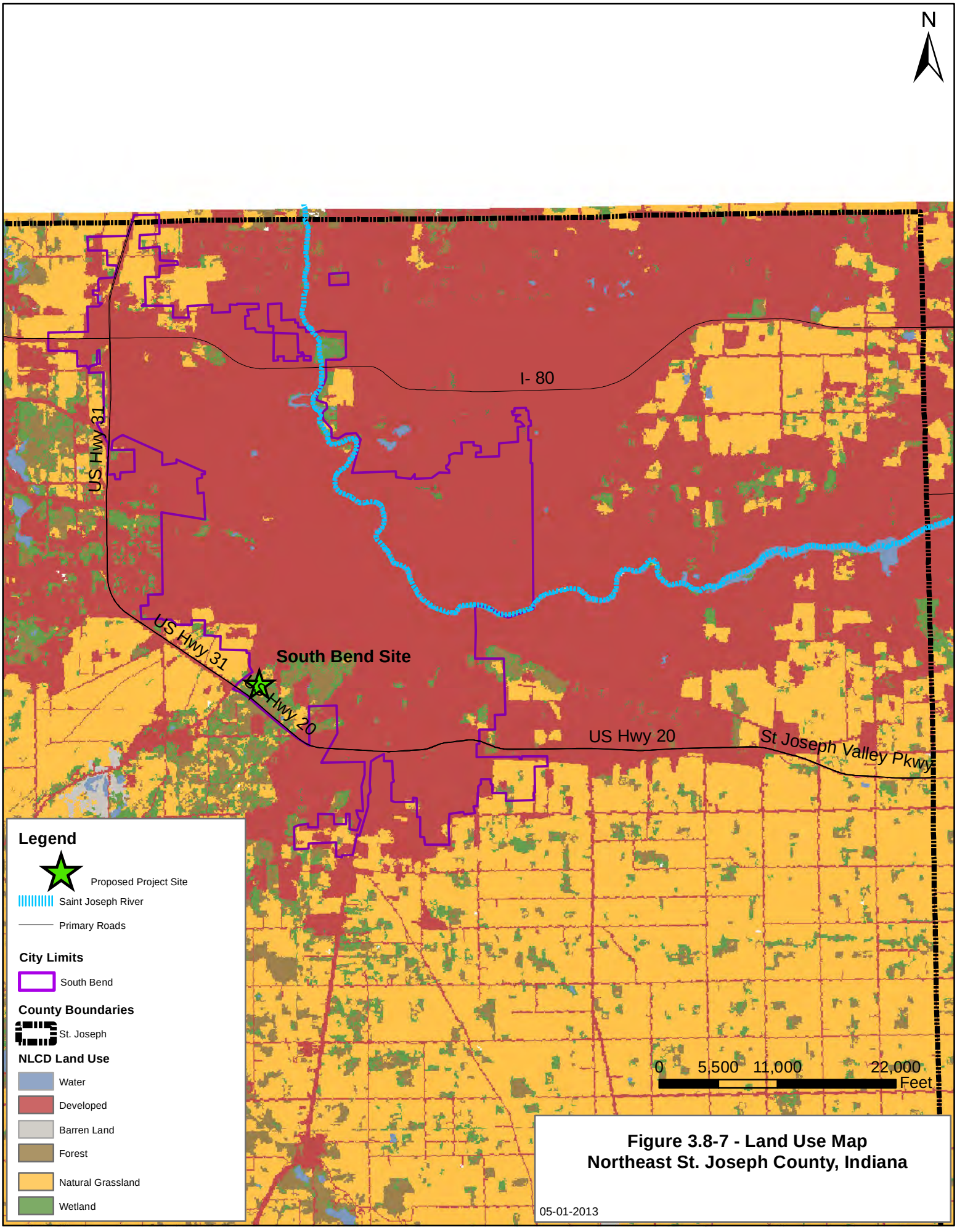

Figure 3.8-7 - Land Use Map
Northeast St. Joseph County, Indiana

05-01-2013

Source: NLCD, Primary Roads, Streams - USDA NRCS

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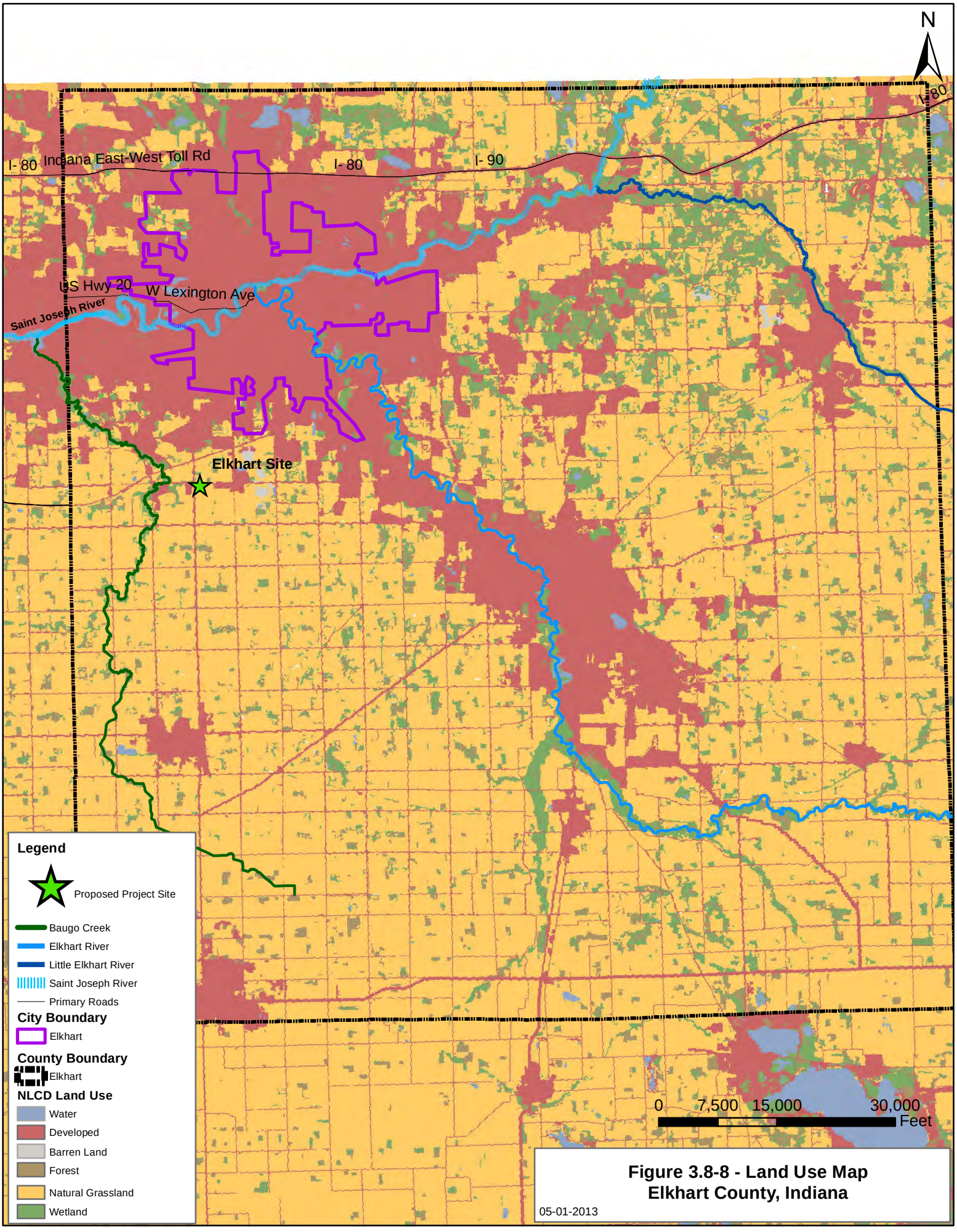

Figure 3.8-8 - Land Use Map
Elkhart County, Indiana

05-01-2013

Source: NLCD, Primary Roads, Streams - USDA NRCS

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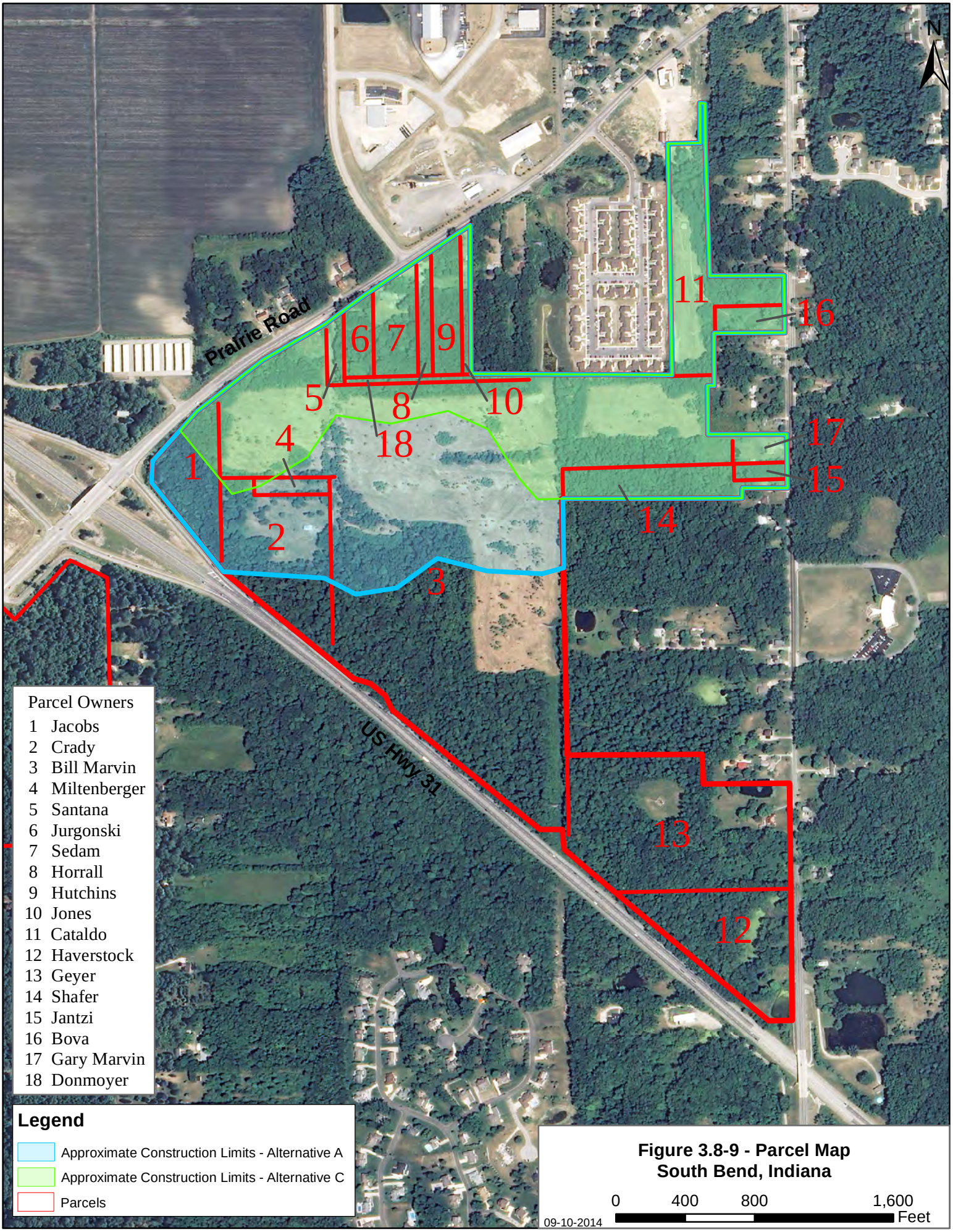

Source: Ortho, Primary Roads - USDA NRCS

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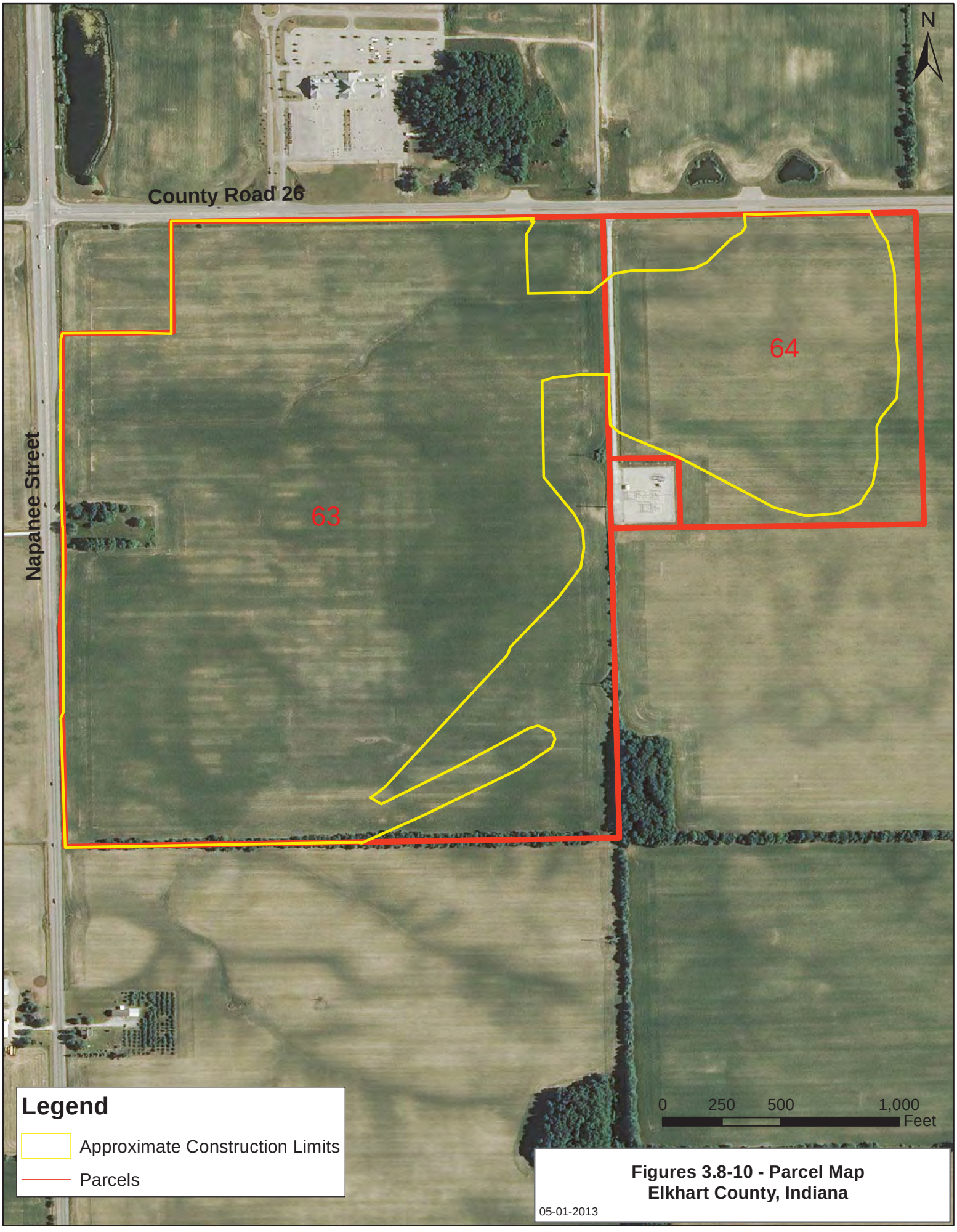

Figures 3.8-10 - Parcel Map
Elkhart County, Indiana

05-01-2013

Source:Ortho - USDA NRCS

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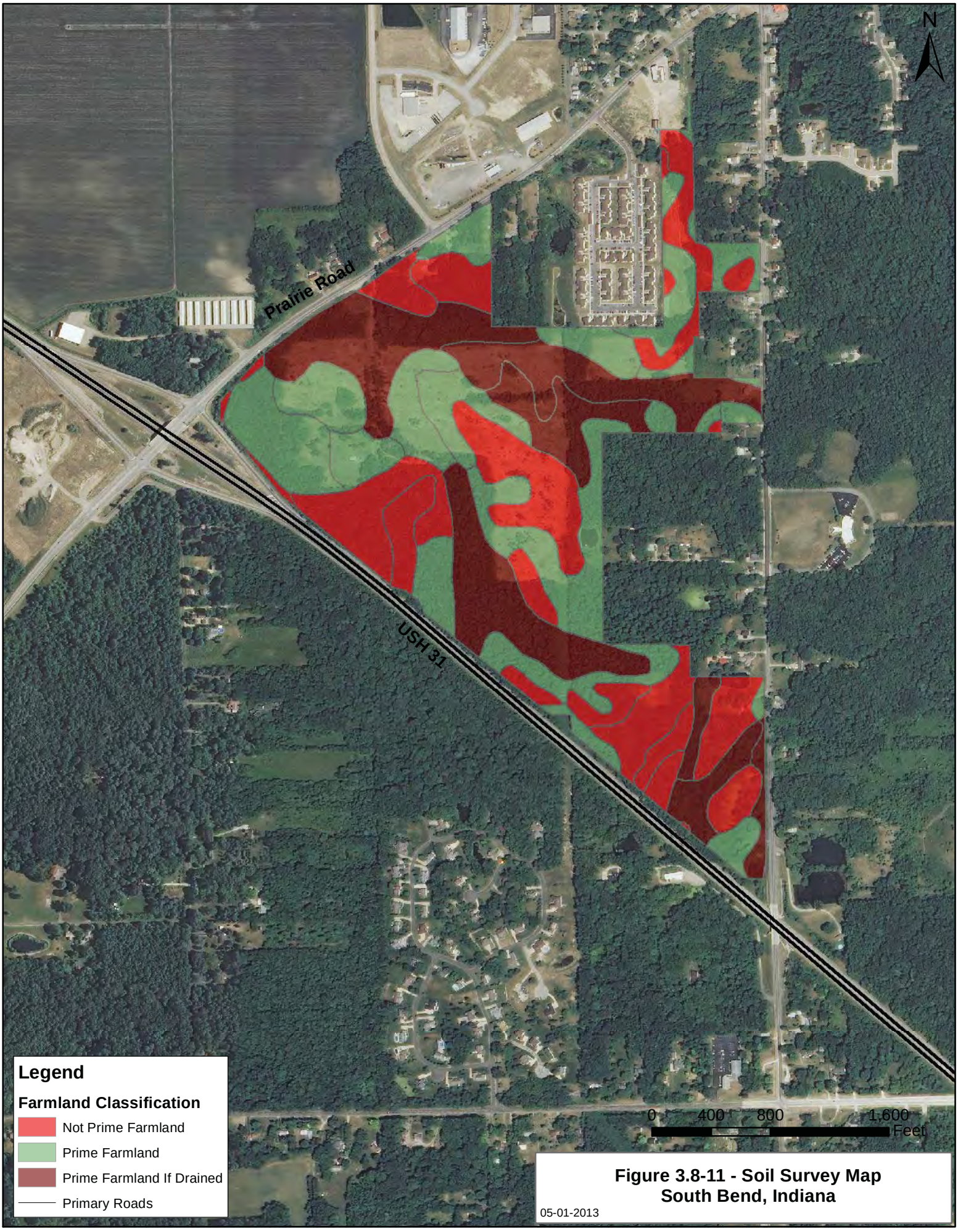

Figure 3.8-11 - Soil Survey Map
South Bend, Indiana

05-01-2013

Source: Ortho, Primary Roads, Soils - USDA NRCS

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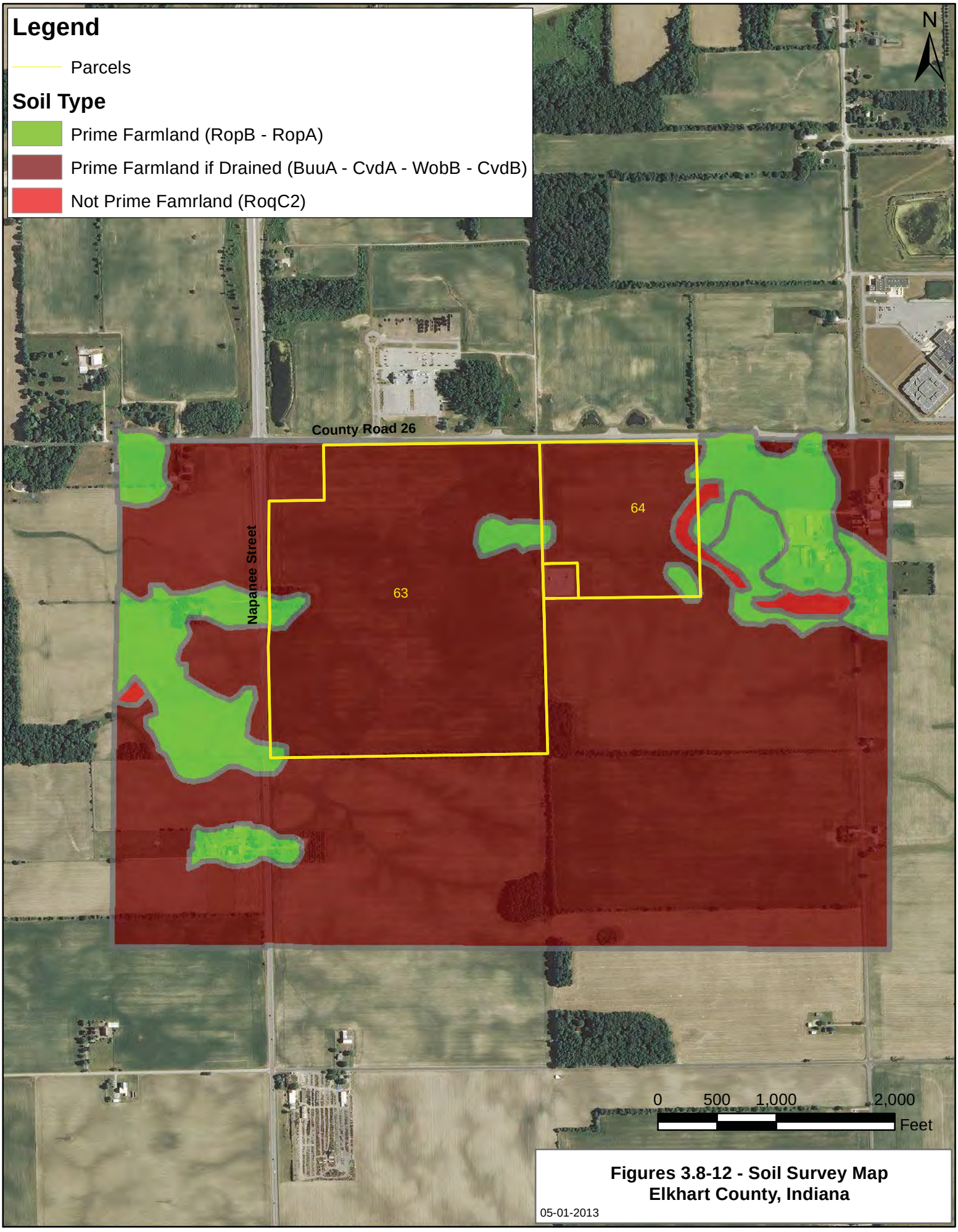

Figures 3.8-12 - Soil Survey Map
Elkhart County, Indiana

05-01-2013

Source:Ortho, Soil Survey - USDA NRCS

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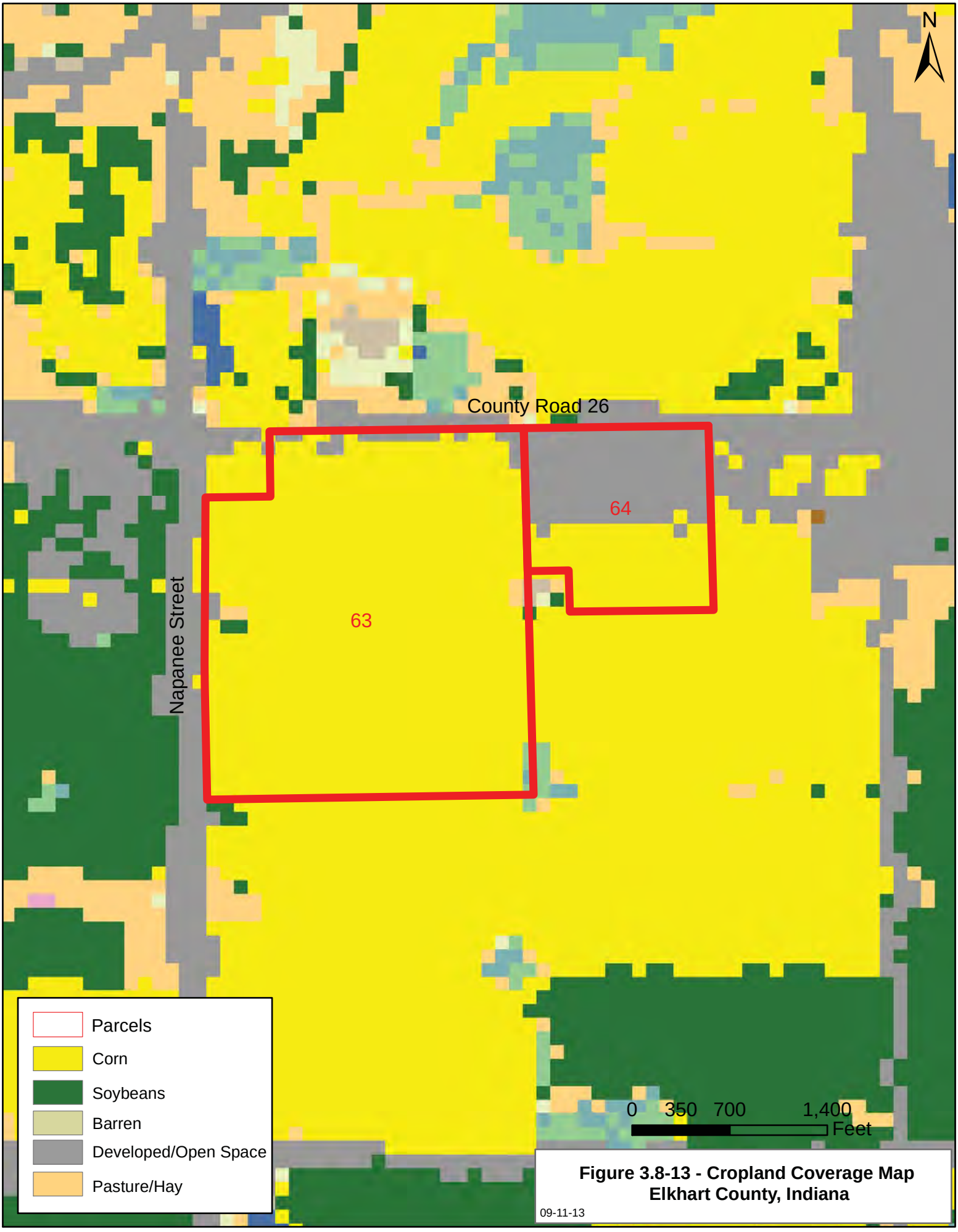

Figure 3.8-13 - Cropland Coverage Map
Elkhart County, Indiana

09-11-13

Source: Land Cover Crop-USDA NRCS: NASS

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Of the two parcels that make up the Elkhart property site, both parcels would be altered because they are within the construction limits of the proposed tribal development. **Figure 3.8-10** shows the parcel outlines and the proposed construction limits for Alternative B.

3.8.3 Agriculture

Currently, there is a federal program available aimed to preserve lands designated as Prime Farmlands. This program and its requirements are defined under the Farmland Protection Policy Act (FPPA) and it is administered by the Natural Resource Conservation Service. The FPPA is designed to minimize impacts of federal programs on unnecessary and irreversible conversion of farmland to nonagricultural land uses. See **Section 4.8.3.3** for details of NRCS consultation.

To define the quality of the agricultural lands, the NRCS categorizes soils into three groups including: Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. For soils to be classified in these three groups, the land does not need to be actively farmed. Prime Farmland is considered to have the best possible features to sustain long-term productivity. Farmland of Statewide Importance includes farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Unique farmland is characterized by low quality soils needing intervention to be successful for crop production. This land generally needs irrigation depending on climate.

The NRCS Web Soil Surveys (NRCS 2013) show soils with "Prime Farmland" designation at the South Bend site (**Figure 3.8-11**) and soils primarily classified as "Prime Farmlands if drained" at the Elkhart site (**Figure 3.8-12).** Currently, only the Elkhart site is actively being farmed. The datasets from the NRCS Web Soil Surveys and specific soil farmland ratings are located in **Appendix F**. The 2011 statewide Cropland Data Layer on the Elkhart Cropland Coverage Map shows the parcels containing the Elkhart Site are primarily farmed for corn (**Figure 3.8-13**) (USDA NRCS 2013).

3.8.4 Other Resource Uses

The South Bend site proposed for the fee-to-trust transfer and the alternative Elkhart site are currently not used for activities such as hunting, fishing, gathering, timber harvesting, mining, or recreational activities.

3.9 PUBLIC SERVICES

Water supply to the South Bend Site and the Elkhart site are provided and regulated by South Bend Water Works and the City of Elkhart, respectively. Water supply quality is regulated by both the EPA and IDEM. South Bend wastewater is regulated and managed by the City of South Bend public works division. Similarly, Elkhart wastewater is regulated by the City of Elkhart public works.

IDEM's Office of Land Quality regulates solid waste facilities and waste types in Indiana (IDEM 2013).

3.9.1 Water Supply

3.9.1.1 South Bend Site

The South Bend Water Works utilizes groundwater from the Hilltop and the St. Joseph River aquifers as its drinking water source. In 2011, 30 wells, five filtration plants, four pumping facilities, and six booster stations were used to supply drinking water to customers. The 30 wells range from 73 to 237 feet below the ground surface. A wellhead protection program has been implemented by the South Bend Water Works to ensure the quality of the drinking water source. Wellhead protection focuses on groundwater protection and pollution prevention.

South Bend Water Works distributes an average of 16.1 MGD of high quality water that meets federal and state requirements (John Wiltrout, pers. comm.). The present capacity of this water supply system is 60 MGD. The IDEM and the EPA require the South Bend Water Works to continually analyze their water and submit the results to ensure its safety. The South Bend Water Works has always exceeded all water quality requirements and performs thousands of tests every year on the water to maintain these conditions (Budget Water USA 2013).

Currently, the project site is located at a divide between a normal pressure district and a high pressure district (**Figure 3.9-1**). Locust Road, which runs along the east side of the project site, is serviced with a 12-inch main and is in the high pressure district. The booster station and end of the high pressure district is at the north end of Locust Road just before the intersection of Prairie Avenue. At that location, a 10-inch main exists running southwest down Prairie Avenue for about 2,000 feet.

3.9.1.2 Elkhart Site

All of the City of Elkhart's drinking water is supplied from ground water. This ground water comes from several hundred feet below ground. Currently, three well fields, the North Main Street Wellfield, the South Wellfield and the Northwest Wellfield provide the water supply for the City of Elkhart. In 2011, 2.8 billion gallons of safe drinking water was supplied to Elkhart customers through 346 miles of water mains (City of Elkhart 2011). The City also maintains a Wellhead Protection Plan in accordance with Indiana state regulations. The program forms a local team which would assist with the protection of public supply wells in the area and identifies and manages existing and potential sources of contamination. The plan also includes a contingency plan to prepare for an emergency well closing and plans for future water supply needs.

The City of Elkhart distributes an average of 15 MGD of high quality water that meets federal and state requirements. The current peak capacity of this water supply system is about 25 MGD (Mike

Machlan, pers. comm.). The IDEM and the EPA require the city to continually analyze their water and submit the results to ensure its safety. The City of Elkhart has always exceeded all water quality requirements and performs thousands of tests every year on the water to maintain these conditions (City of Elkhart 2011).

Currently, the project site is located in an elevated pressure zone of the City of Elkhart's water system because it is at a higher elevation than other areas of the system (**Figure 3.9-2**). An existing water main is situated just north of the project site approximately 900 feet east of the intersection of Nappanee Street (State Road 19) and County Road 26.

3.9.2 Wastewater service

3.9.2.1 South Bend Site

The project site is within the wastewater treatment service district of the City of South Bend (**Figure 3.9-3**). The treatment facility is classified as Class IV activated sludge treatment and is designed to produce an average 48.0 MGD of treated, reclaimed water with a peak design flow of 77.0 MGD. Currently, the treatment plant is running at an average of 30 MGD (Kim Thompson, pers. comm.). The service area for South Bend wastewater treatment has over 590 miles of sanitary and combined sewer with over 40 pumping stations at various locations throughout the district. Pumping stations and combined sewer overflow points are monitored continuously to ensure proper operation. Alarms are triggered at the wastewater treatment plant, and crews are dispatched to respond to any problems that may be detected. Following treatment, the plant currently discharges into the St. Joseph River and also has 36 combined overflow locations for discharge during flooding.

There is a Long Term Control Plan (LTCP) in place for the City of South Bend over the next twenty years to reduce their combined sewer overflows. The main objectives of this plan are to reduce the current 36 overflow locations to nine, reduce the number of overflows to no more than four per year per location, and to upgrade the treatment plant to "match the capacity of 100 MGD of the existing interceptor as it enters the plant" (United States District Court 2013). Treatment systems, mainly disinfection and solids removal, will also be established at the remaining nine CSO's. The City is required to submit monthly and semi-annual discharge monitoring reports to IDEM to ensure that they are on course with this Long Term Control Plan.

Currently, the project site is located near three accessible main sewer lines. The first line is an 8-inch gravity sanitary line which runs north starting at the intersection of Locust Road and Assumption Drive. This joins with another gravity sanitary line that runs northeast along Prairie Avenue for about 1,200 feet at the intersection of Locust Road and Prairie Avenue. Finally, there is a 15-inch gravity line which runs north and begins at the intersection of Prairie Avenue and New Energy Drive (see **Figure 3.9-3**).

3.9.2.2 Elkhart Site

The project site is within the wastewater treatment service district of the City of Elkhart. The Elkhart Wastewater Treatment Plant is located at 1201 South Nappanee Street. The facility utilizes the conventional activated sludge process and is designed to treat an average daily flow of 20 MGD with a peak flow capacity of 40 MGD (City of Elkhart 2013). Currently, the treatment plant is running at 10-15 MGD in dry conditions and 30-35 MGD in wet conditions (Mike Machlan, pers. comm.). The sewer system for Elkhart includes both separate sanitary sewer and combined sewer with pumping stations at various locations throughout the district. Pumping stations and combined sewer overflow points are monitored continuously to ensure proper operation.

Preliminary treatment components include automatic bar screens, cyclone grit removal and eight rectangular clarifiers. Secondary treatment components include five aeration tanks utilizing a biological nutrient removal process for Ammonia and Phosphorus. Effluent from the facility is disinfected with Chlorine and later removed using Sulfur Dioxide. Following treatment, the plant discharges effluent to the St. Joseph River under the authority of the Indiana Department of Environmental Management. The average annual sewer overflow volume from the City of Elkhart's sewer system into the St. Joseph River Watershed is approximately 179.4 MG (Elkhart CSO LTCP). There is a Long Term Control Plan in place for the City of Elkhart over the next twenty years to reduce their combined sewer overflows to a volume of 44.9 MG/year. The main objectives of this plan are to partially or completely remove the number of overflow locations (currently 33), reduce the number of overflows to no more than nine per year per location, and to upgrade the treatment plant to a peak capacity of 60 MGD (City of Elkhart 2011). Overflow monitoring equipment is going to be installed at the remaining CSO's and a new water quality plan has been developed. The City is required to submit monthly and semi-annual discharge monitoring reports to IDEM to ensure that they are on course with this Long Term Control Plan.

Currently, the project site is located near three main sewer lines. There are two 8-inch gravity sanitary lines with one running north starting at County Road 26 at the west and east sides of the driveway for American Countryside Market. The other 8-inch gravity line starts at the intersection of County Road 26 and County Road 7. These lines run north and join with a 15-inch gravity sanitary line that runs west and heads towards the nearest lift station (**Figure 3.9-4**).

3.9.3 Solid Waste Service

There are two general categories of non-hazardous solid waste facilities in Indiana: land disposal facilities and processing facilities. Those facilities can accommodate different categories of waste, including municipal waste, solid waste, construction–demolition waste, special waste, or other wastes. IDEM's Office of Land Quality regulates these solid waste facilities and waste types in Indiana.

IDEM's Office of Pollution Prevention and Technical Assistance and Office of Land Quality collaborate to reduce solid waste levels and achieve waste disposal reduction goals. IDEM also assists solid waste management districts in Indiana with their local level efforts to increase reuse and recycling by providing funding in the form of grants and loans. IDEM's Office of Pollution Prevention and Technical Assistance supports and advocates the financial "Pay-As-You-Throw" program that is typically a part of the solid waste management districts' local management plans. The Pay-As-You-Throw program is based on the principle that the more you throw away, the more you pay. This is similar to the billing systems used by other utilities. This program has been shown to increase recycling efforts while reducing waste disposal volumes.

The Indiana state mandates, the House Enrolled Act (HEA 1240) and the Senate Enrolled Act 25, were signed into state laws by 1990, and are designed to address solid waste concerns in Indiana. To comply with these acts, a 20-year plan for Indiana was designed to reduce the amount of solid waste incinerated and disposed of in landfills by 35% before 1996 and 50% before 2001. There have been no recent state mandates for solid waste initiatives.

3.9.3.1 South Bend Site

For City of South Bend residential customers, the city manages wastes and recycling by hiring private contractors for the job. Commercial and industrial customers must contract directly with private waste management contractors for trash removal and recycling needs. It is anticipated that the Pokagon Band would contract with a private firm for its trash and recycling disposal needs.

Local Solid Waste Collection and Disposal

The company Waste Management currently provides solid waste collection services for the project area through weekly residential trash pick-ups (Andre Price, per. comm.). The St. Joseph County Solid Waste Management District handles biweekly residential curb side recycling pickup. St. Joseph County also has a permanent Household Hazardous Waste collection facility located at 1105 E. Fifth Street which accepts various residential materials on a free drop-off basis (Solid Waste Management District of St. Joseph County 2013).

There are multiple landfills and/or recycling centers in and around St. Joseph County that are utilized by private waste management companies to handle residential and commercial wastes, including: Southeast Berrien County Landfill, Prairie View Landfill, Earthmovers Landfill and Green Tech Transfer Station. Prairie View and Earthmovers Landfills are owned by Waste Management, and Green Tech Transfer Station is owned by Reliable.

3.9.3.2 Elkhart Site

The Elkhart County Solid Waste Management District, created to comply with the HEA 1240 Act, manages local solid waste. The primary objectives of the District are to protect the environment and encourage development of environmentally sound business, industry and recycling practices.

Local Solid Waste Collection and Disposal

For Elkhart County residential, commercial and industrial customers, trash and recycling pick-up is handled privately through a number of small and large waste management companies. Some municipalities within the county, such as the City of Elkhart, handle waste and recycling pick-up for its residential customers. The Elkhart site's mailing address is the City of Elkhart but it is outside the city limits; therefore, wastes for this location would be handled privately.

Elkhart County residential customers can drop off recyclables at one of 14 drop off sites within Elkhart County. The Elkhart site is located between the Cities of Elkhart, Wakarusa and Goshen within the County. There are three recycling locations within the City of Elkhart and six recycling locations within the City of Goshen. Wakarusa's recycling site is located in the Industrial Park off County Road 103 just south of the project site.

There are several landfills within the region that local and national solid waste management companies utilize, including: Elkhart County Landfill, EarthMovers Landfill, Countyline Landfill in Argos, IN, and Green Tech Transfer Station. The Green Tech transfer station, owned by Reliable, and EarthMovers, managed by Waste Management, are both privately owned.

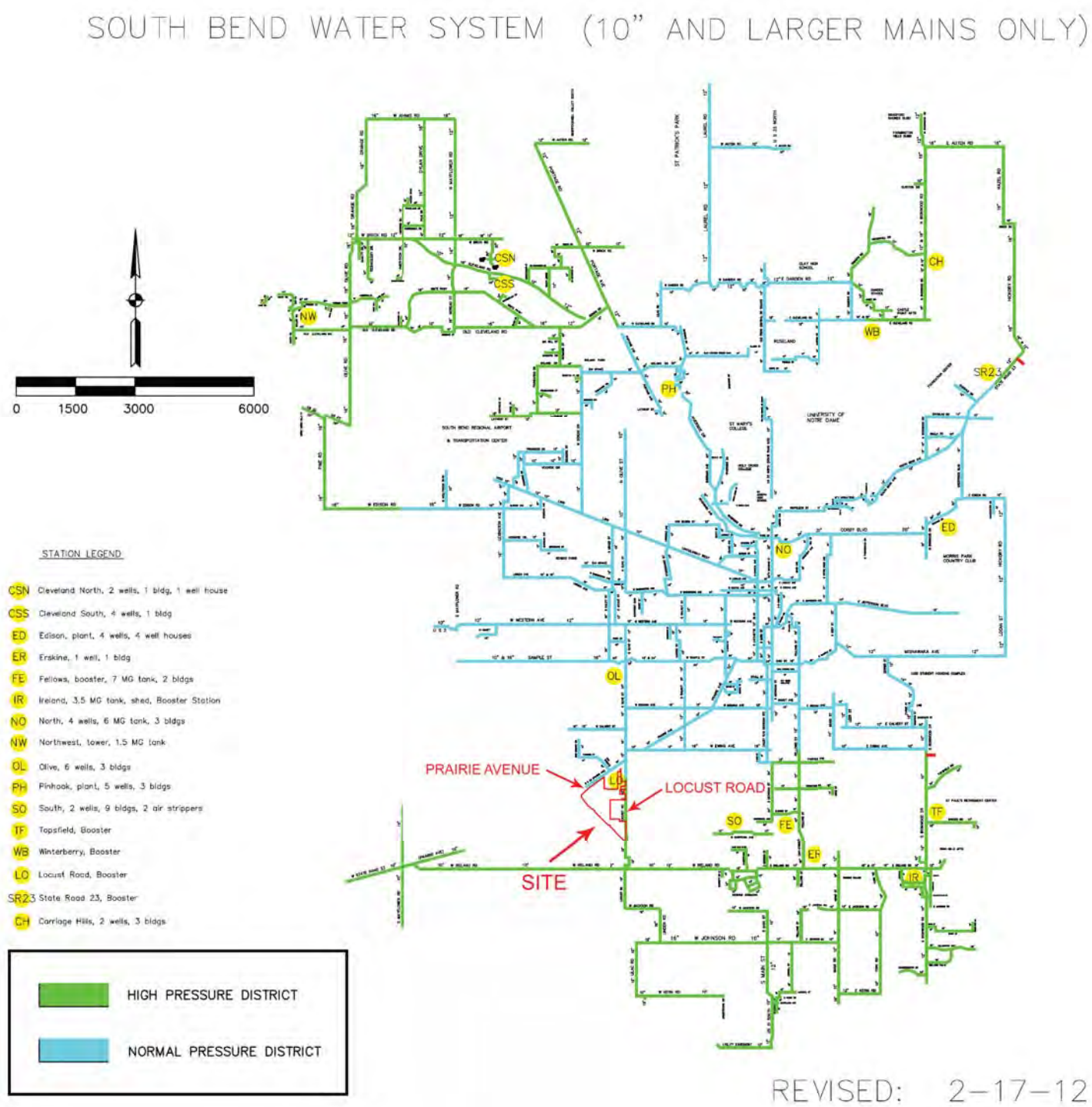
Since the Elkhart project site is within the Elkhart County boundaries, it is anticipated that the Pokagon Band would contract with a private firm for its trash and recycling disposal needs.

3.9.4 Electricity, Natural Gas, and Telecommunications

3.9.4.1 Electrical and Gas Services

Electricity is supplied to the South Bend and Elkhart property regions by the Indiana and Michigan Power Company (I&M). I&M serves the South Bend site through one circuit via 12 kilovolt power line. The nearest substation, the Kankakee Substation, is located northeast of the intersection of Prairie Avenue and Cotter Street. The Elkhart site would be serviced by the Countryside Substation located at Hwy 19 and CR 26.

Natural Gas services are supplied to the South Bend and Elkhart property regions through Northern Indiana Public Service Company.



Source: City of South Bend Department of Public Works

Figure 3.9-1
City of South Bend Water System Map

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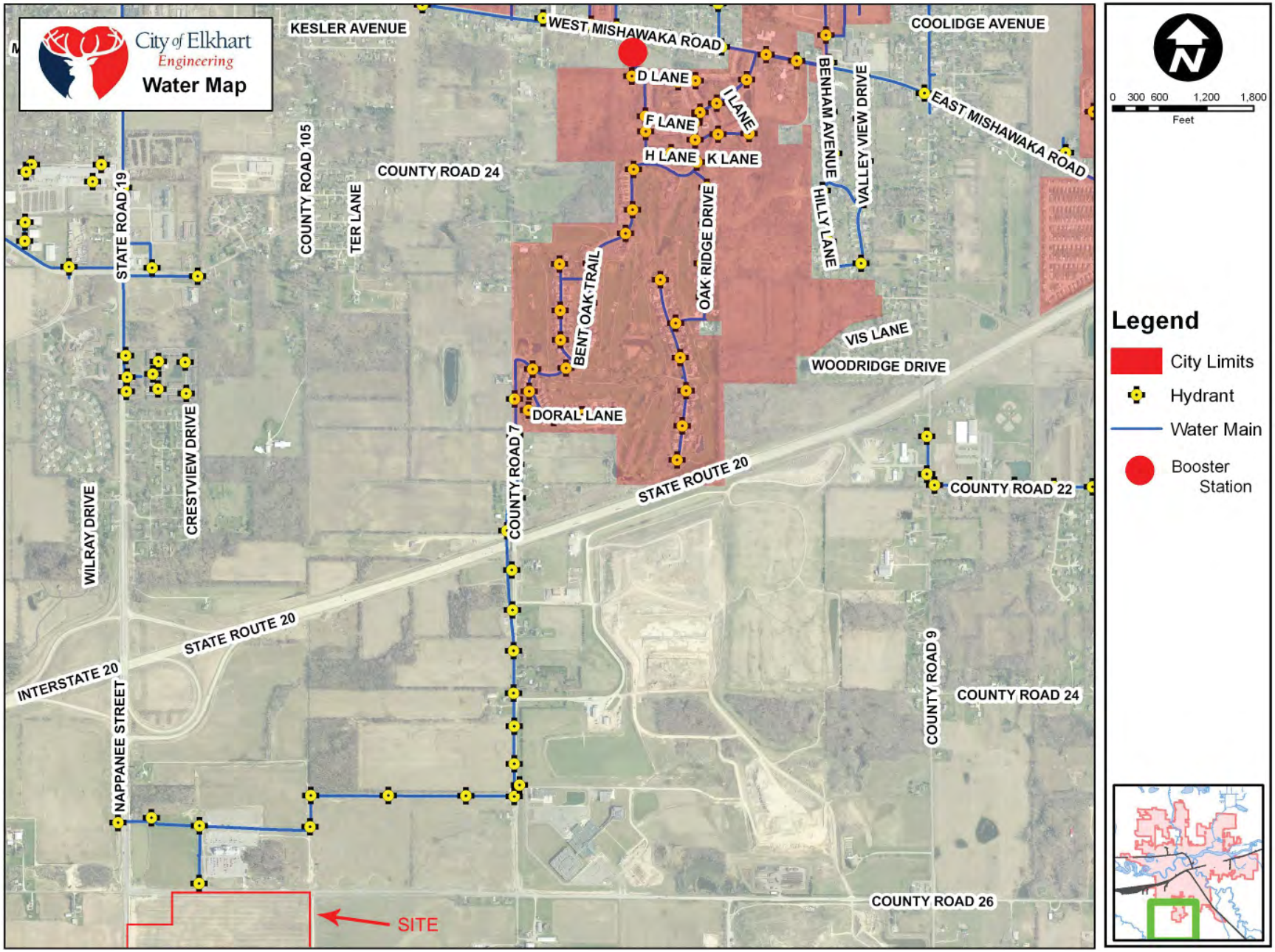

Source: City of Elkhart Public Works and Utilities Department

Pokagon South Bend EIS /January 2013

Figure 3.9-2
City of Elkhart Water Map

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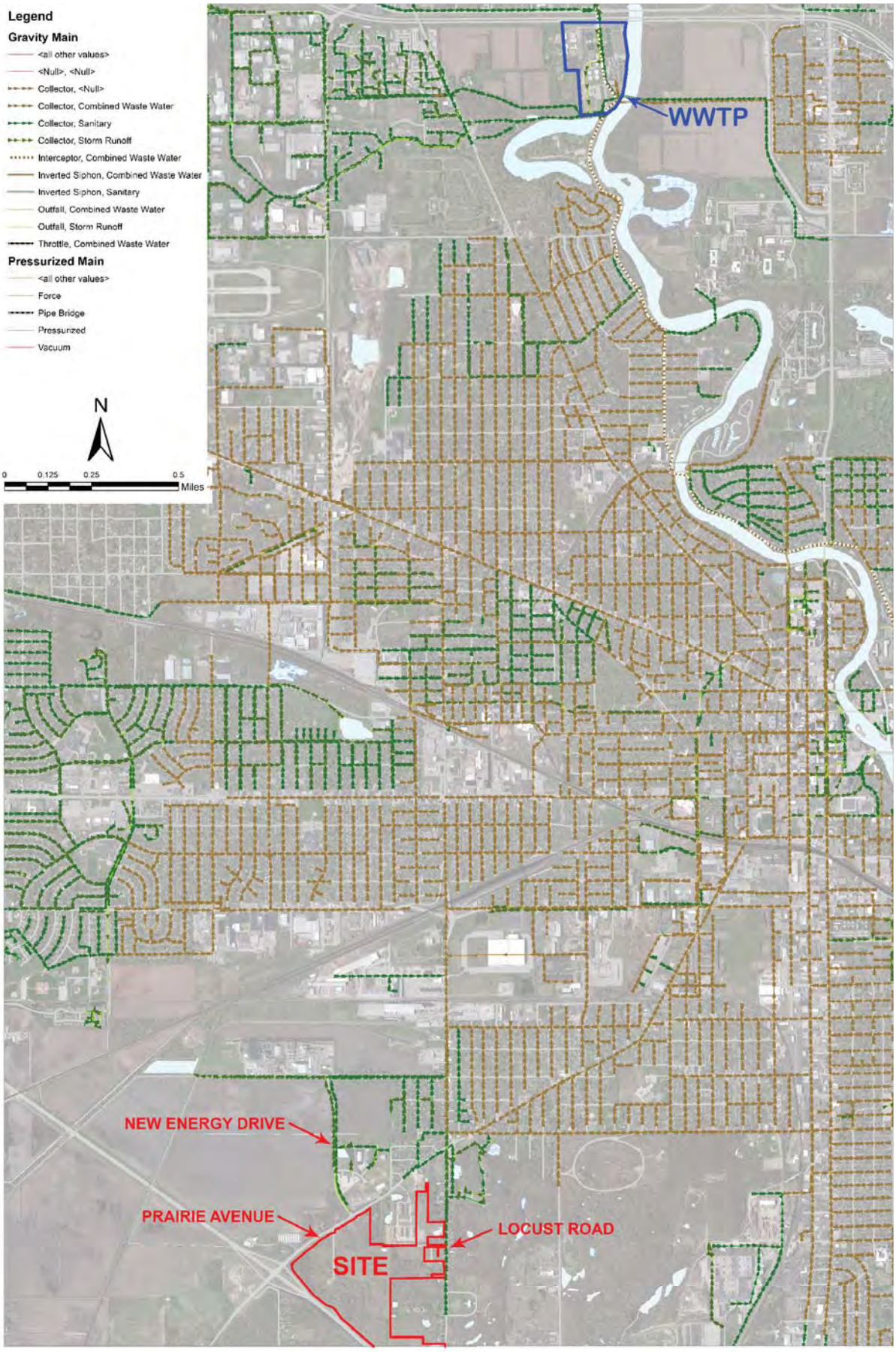

Source: City of South Bend Department of Public Works

Figure 3.9-3
City of South Bend Sewer System

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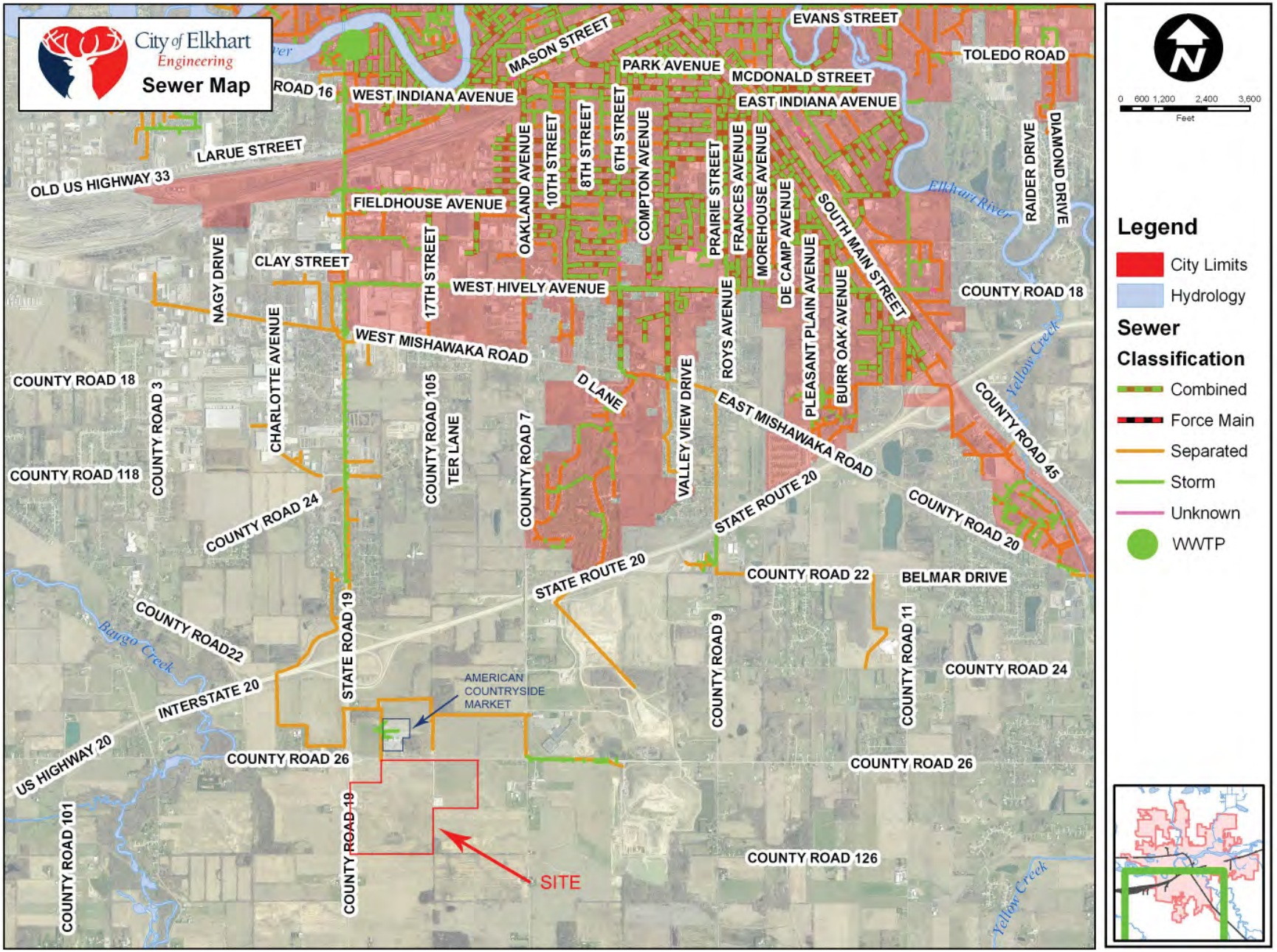

Source: City of Elkhart Public Works and Utilities Department

Figure 3.9-4
City of Elkhart Sewer Map

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3.9.4.2 Telecommunications

South Bend Site

AT&T, formerly SBC, provides basic telecommunication services, including cellular communications, to the project area. AT&T currently has above ground phone lines along Prairie Avenue from Maple Street to Locust Street. AT&T can provide local and long distance service. AT&T can also provide cable and internet services to the project area (AT&T, pers. comm.).

Elkhart Site

Frontier Communications provides all basic telecommunication services, including cellular communications, to the project area. Frontier currently has above ground phone lines along County Road 26 which provides service to the surrounding areas near the site. Frontier can provide local toll calls, long distance service, a 12 MB internet service, and Cable TV to the project area. If more than a 12 MB internet service is required, additional telecommunications infrastructure would be needed (Frontier, pers. comm.).

3.9.5 Public Health and Safety

The City of South Bend and the County of Elkhart and each of their respective public safety departments have civil jurisdiction to provide public health and safety services within City boundaries. The fee-to-trust acquisition would transfer jurisdiction of the designated parcels to the Pokagon Band, but the Band could voluntarily enter into agreements with the City and/or County to continue to provide public safety services after the jurisdictional shift occurs.

3.9.5.1 Law Enforcement

The State of Indiana and local law enforcement jurisdictions would be partially relieved of the burden of providing law enforcement services, as the Pokagon Band has a fully-equipped police department. Primary law enforcement services would be provided by the Pokagon Band Police Department. It is anticipated that the Band would eventually enter into one or more cross-deputization agreements with Indiana police agencies, which would allow these jurisdictions to share law enforcement authority, enforcement personnel, and resources. The Indiana State Police-District 24 Bremen, could enter into a cross-deputization agreement for providing law enforcement services to both the South Bend and Elkhart project sites. The cross-deputization agreement would be subject to any limitations in applicable law regarding the legal capacity of the Indiana State Police and other Indiana law enforcement agencies to confer law enforcement authority on the Pokagon Band Tribal Police. Located at 1425 Miami Trail Bremen, IN 46506, District 24 provides law enforcement services to St. Joseph, Elkhart, Marshall, and Kosciusko counties (Indiana State Police 2013), with the headquarters located approximately 14 miles southeast of the South Bend site and 15 miles southwest of the Elkhart site. The St. Joseph County Sherriff's Department and the South Bend Police Department (SBPD) could also enter in cross-deputization agreements for local

law enforcement services at the South Bend site, and the Elkhart County Sheriff's Department could do so for local law enforcement services at the Elkhart site.

South Bend Site

The St. Joseph County Sherriff's Department consists of seven divisions: Patrol, Detective Bureau, Court Security, Civil, Jail, Warrants, and Records. Police headquarters and the county jail are located at 401 West Sample Street in South Bend, approximately 2.6 miles northeast of the South Bend site. The Patrol Division, which is responsible for responding to citizen calls and investigating crime and traffic incidents, is located at 4817 Lincoln Way West in South Bend, approximately 3.8 miles northwest of the South Bend Site. The Patrol Division provides law enforcement services to a 467-square mile area, and in 2007 was dispatched to respond to 43,074 calls. This division has three shifts per day in order to provide law enforcement services to St. Joseph County, and each shift has approximately 18 officers on duty (St. Joseph County Sherriff's Department 2013). According to the Federal Bureau of Investigation (FBI) Uniform Crime Reporting Statistics (UCR), the most frequent crimes reported to the St. Joseph County Sherriff's Department in 2010 were property crimes (2107 offenses reported) and larceny-theft (1440 offenses reported) (FBI UCR 2010a).

The South Bend Police Department is located at 701 West Sample Street in South Bend, approximately 2.4 miles northeast of the South Bend site. Approximately 260 sworn officers and 110 civilian employees provide law enforcement services to over 107,000 citizens in South Bend. The South Bend Police Department is comprised of four divisions: Uniform, Investigative, Services and Community Relations. The Uniform Division is responsible for patrolling the South Bend area and is the largest division, employing over 150 officers in motor patrol, K9 units, SWAT, and bike patrol, among others. The City of South Bend is separated into 20 patrol areas or 'beats' in order to cover 520 miles of streets and 499 miles of alleys; the proposed South Bend site is located in Beat #29 **(Figure 3.9-5**) (SBPD 2009). According to the 2006 annual report, 110,000 calls for police services were received by the South Bend Police Department (SBPD 2006). The FBI UCR indicate that the most frequent crimes reported to the South

Bend Police Department in 2010 included property crimes (5929 offenses reported) and larceny-theft (3411 offenses reported) (FBI UCR 2010b).

Elkhart Site

The Elkhart County Sheriff's Department is located at 26861 County Road 26 in Elkhart, approximately 1.0 mile northeast of the Elkhart site. Approximately 71 merit/police officers, 94 correction officers, and 36 support staff are divided among four divisions: Administrative Services, Patrol, Investigations, and Corrections (Jim Bradberry, pers. comm.). According to the annual report for 2011, the Elkhart County Sherriff's Department responded to 78,412 calls for service, with most crimes related to residential burglary and larceny-theft (ECSD 2011). The FBI UCR identify similar offenses, with the most frequent crimes reported to the Elkhart County

Sherriff's Department in 2010 listed as property crimes (1646 offenses reported) and larceny-theft (987 offenses reported) (FBI UCR 2010c).

3.9.5.2 Fire Protection

South Bend Site

The South Bend Fire Department (SBFD) employs 248 full time firefighters in four different divisions (Fire, Emergency Medical Services [EMS], Special Operations and Fire Prevention and Inspection). Station 5 is the closest of eleven stations to the proposed South Bend project site, located at 2221 Prairie Avenue, approximately 0.9 mile northeast of the South Bend Site. The South Bend Fire Department serves a population of 107,700 residents and responds to calls regarding emergency medical incidents, fires and complex rescue situations. The Special Operations division includes a Hazardous Materials Response Team, Swiftwater Response Team, Tactical Rescue Response Team and the Administration of the Indiana River Rescue School. The Fire Prevention and Inspection division provides public safety education and is responsible for enforcing all City and State fire codes, including plan review and inspection services (SBFD 2013a).

Elkhart Site

The Elkhart Fire Department (EFD) employs 124 sworn firefighters to respond to calls for fire and medical emergencies. Station 3 is the closest of seven stations to the proposed Elkhart project site, located at 1612 West Mishawaka Road, approximately 2.5 miles north of the Elkhart site. Among the seven fire stations located throughout the City of Elkhart, the Elkhart Fire Department uses an active fleet of six engines, two trucks, and three reserve engines to provide services to 51,800 residents. The Department also has the ability to conduct fire investigations and inspections; a staff of three fire inspectors each inspects approximately 500 buildings per year. The fire stations consist of exclusively paid staff, not volunteers, which on average, deliver 12,000 responses per year (combination of fire and EMS [80 percent EMS-related]) (EFD 2013a).

3.9.5.3 Emergency Medical Services

South Bend Site

The South Bend Fire Department EMS division employs 61 Paramedics, 24 Intermediates, 27 Advanced Emergency Medical Technicians (EMT's), 99 Basic EMT's and 20 First Responders in order to respond to emergency medical incidents, fires, and complex rescue situations. Station 5 is the closest of eleven stations to the proposed South Bend project site, located at 2221 Prairie Avenue, approximately 0.9 miles northeast of the South Bend Site. The EMS division of the South Bend Fire Department provides Advanced Life Support to residents County wide; four transport units are dedicated to serving the City of South Bend, and three transport units and one non-transport unit are dedicated to the remainder of St. Joseph County. The EMS division is also comprised of the NeoNatal Transport Unit with Memorial Hospital and Critical Care Transport Unit

with St. Joseph Hospital. The EMS Division participates in all Fire Service, Hazardous Materials, Confined Space, Swift Water, Divers, Boat Operators and Terrorist Preparedness activities (SBFD 2013b).

The nearest hospitals to the proposed South Bend project site that could provide emergency medical services include Memorial Hospital of South Bend (approximately 3.6 miles northeast) and St. Joseph Regional Medical Center (approximately 7.4 miles northeast). Emergency air transportation would be provided by Memorial MedFlight.

Elkhart Site

The Elkhart Fire Department employs 35 state-certified paramedics and approximately 90 Emergency Medical Technicians to respond to calls for fire and medical emergencies. All firefighters in the department are also certified EMT's. Station 3 is the closest of seven stations to the proposed Elkhart project site, located at 1612 West Mishawaka Road, approximately 2.5 miles north of the Elkhart site. Among the seven stations located throughout the City of Elkhart, the Elkhart Fire Department uses four paramedic ambulances and two reserve ambulances to provide services to approximately 51,800 residents. Each medical professional is certified in advanced cardiac life support, Pediatric Advanced Life Support, Advanced Medical Life Support and Intermediate Trauma Life Support. The Department delivers on average 12,000 responses per year (combination of fire and EMS [80 percent EMS-related]) (EFD 2013b).

The nearest hospitals to the proposed Elkhart project site that could provide emergency medical services include Elkhart General Hospital (approximately 4.1 miles north) and Indiana University Health Goshen Hospital (approximately 9.5 miles southeast). Emergency air transportation would be provided by Indiana University Health LifeLine.

3.10 OTHER VALUES

3.10.1 Noise

Noise criteria used in this study include the Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) for the assessment of noise impacts related to roadway traffic. In addition, for noise sources other than roadway traffic, environmental impacts are also evaluated relative to the change in the ambient (existing) conditions at sensitive noise receptors within the project area as a result of the proposed project.

3.10.1.1 Acoustical Background Information

Noise is generally defined as unwanted or annoying sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB). Most sounds heard in the environment do not consist of a single frequency, but rather a broad band of frequencies. The intensities of each frequency add together to

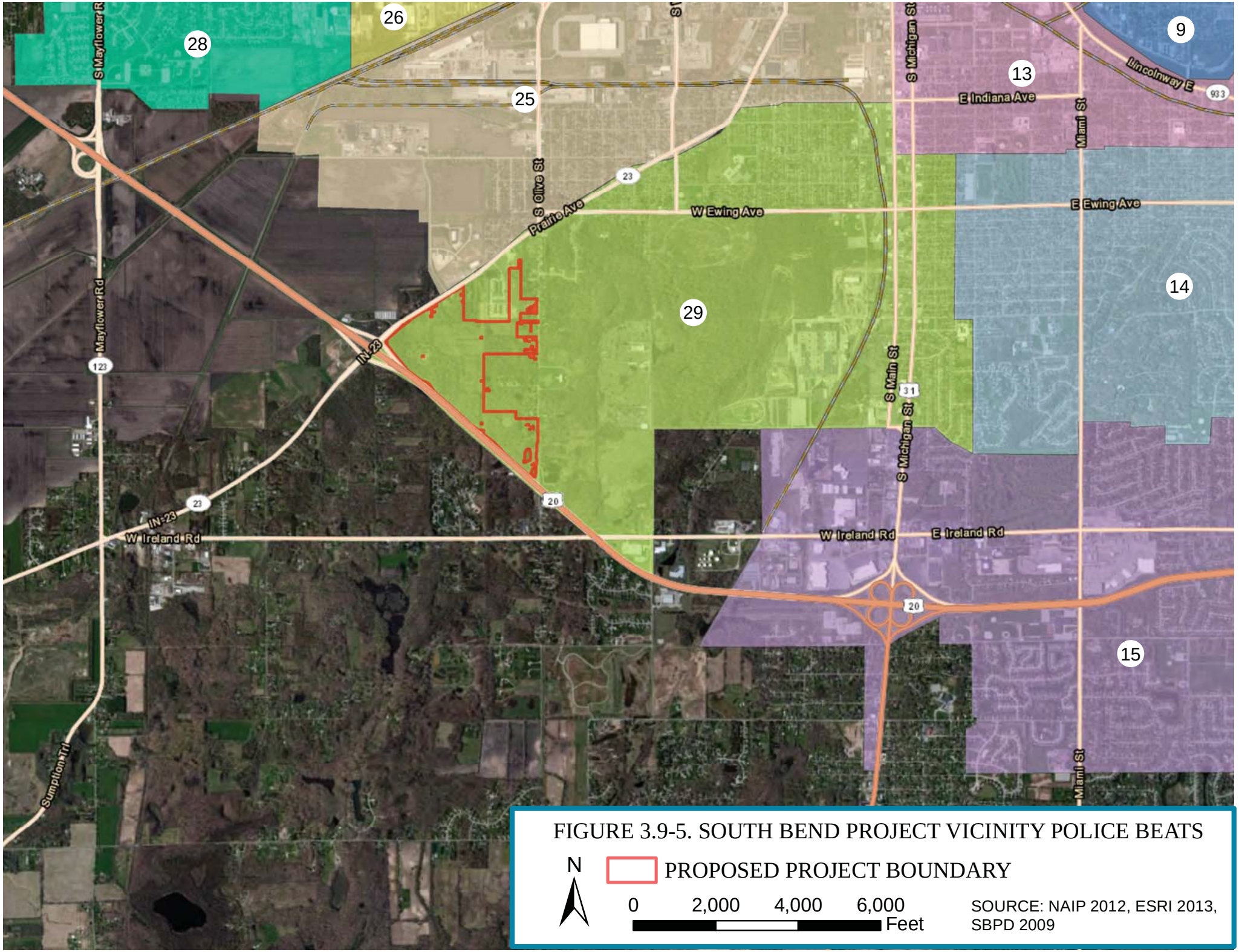

FIGURE 3.9-5. SOUTH BEND PROJECT VICINITY POLICE BEATS

N

PROPOSED PROJECT BOUNDARY

0 2,000 4,000 6,000 Feet

SOURCE: NAIP 2012, ESRI 2013, SBPD 2009

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generate sound. Because the human ear does not respond to all frequencies equally, the method commonly used to quantify environmental noise consists of evaluating all of the frequencies of a sound according to a weighting system. It has been found that the A-weighted (dBA) filter on a sound level meter, which includes circuits to differentially measure selected audible frequencies, best approximates the frequency response of the human ear.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from various sources, including relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of noise, a statistical noise descriptor called the equivalent sound level (L_{eq}) is commonly used. L_{eq} describes a noise sensitive receptor's cumulative exposure from all noise-producing events over a one-hour period and provides an "average" noise level for a measured time period.

The decibel scale is logarithmic and expresses the ratio of the sound pressure unit being measured to a standard reference level. Because decibels are logarithmic units, sound levels cannot be added by ordinary arithmetic means. The following general relationships provide a basic understanding of sound generation and propagation:

- An increase or decrease of 10 dBA will be perceived by a receptor to be a doubling or halving, of the sound level.
- Doubling the distance between a "line source" such as a highway and a receptor will typically produce a 3 dBA sound level decrease, while doubling the distance between a point source such as a generator and a receptor will typically produce a 6 dBA sound level decrease.
- A 3 dBA sound level change is barely detectable by the human ear.

Figures 3.10-1 and **3.10-2** provide several examples of typical noise sources with corresponding sound levels that are helpful in understanding and comparing various sound levels.

3.10.1.2 Regulatory Guidelines

FHWA regulations for roadway traffic noise are contained in 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction*, dated July 13, 2010. These regulations established the Noise Abatement Criteria for determining noise impacts for a variety of land uses. Land uses are categorized on the basis of their sensitivity to noise. FHWA land use Activity Categories along with the criteria are presented in Table 3.10-1. The NAC sound levels are only to be used to determine a roadway noise impact. A traffic noise impact occurs when either of two conditions is met:

- The predicted traffic noise level approaches or exceeds the NAC for an activity category. "Approaching" the NAC is defined as being within one dB of the NAC levels listed in **Table 3.10-1**.

- The predicted future noise level substantially exceeds the existing noise level (defined as an increase of 10 dBA or more).

Table 3.10-1
FHWA Noise Abatement Criteria

Activity Category	Activity Criteria L_{eq}	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Residential
C	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or not profit institutional structures, radio studios, recording studios, recreation areas, Section (4F) sites, schools, television studios, trails and trail crossings
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public and not profit institutional structures, radio studios, recording studios, schools, and television studios
E	72 (Exterior)-	Hotels, motels, offices, restaurant/bars and other developed lands, properties, or activities not included in A-D or F
F	-	Agriculture, airports, bus yards, emergency services, industrial logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	-	Undeveloped lands that are not permitted

Source: FHWA *Highway Noise Control Standards and Procedures*, 23 CFR Part 772

3.10.1.3 Affected Environment

Noise-sensitive receptors are locations that may be subject to interference from noise. They include, but are not limited to, picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.

South Bend Site

Existing noise-sensitive receptors in the immediate project area mainly consist of scattered single-family homes to the north, east, and west of the project site. An evaluation of existing traffic volumes and the proximity of the receptors to local roadways was performed so as to establish groupings of receptors, referred to as Noise-Receptor Groups (NRG). The NRGs are shown on **Figures 3.10-3** and **3.10-5**, while **Table 3.10-2** provides a description of each NRG.

FIGURE 3.10-1
TYPICAL A-WEIGHTED SOUND LEVELS

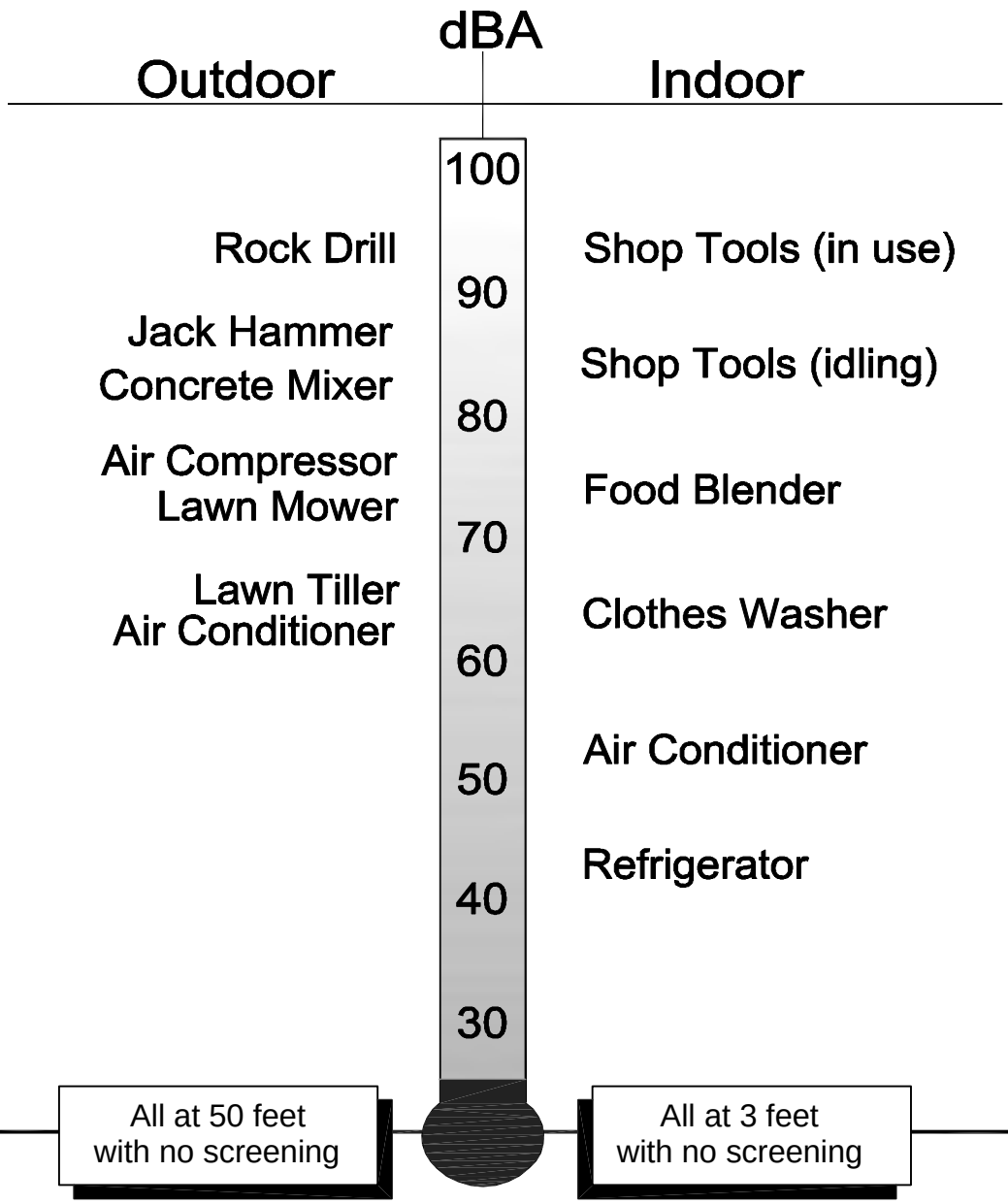

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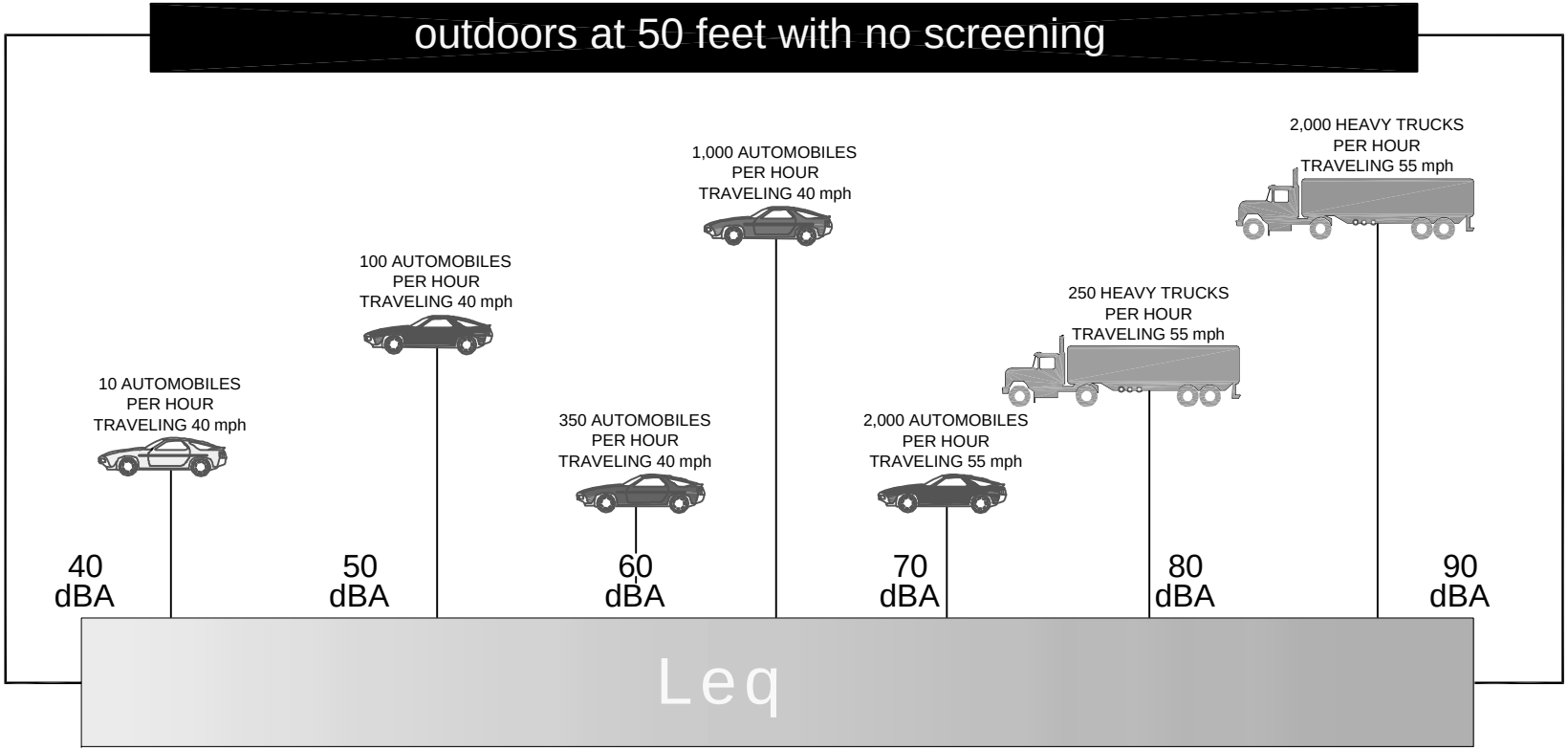
Figure 3.10-2

TYPICAL HOURLY LEQS



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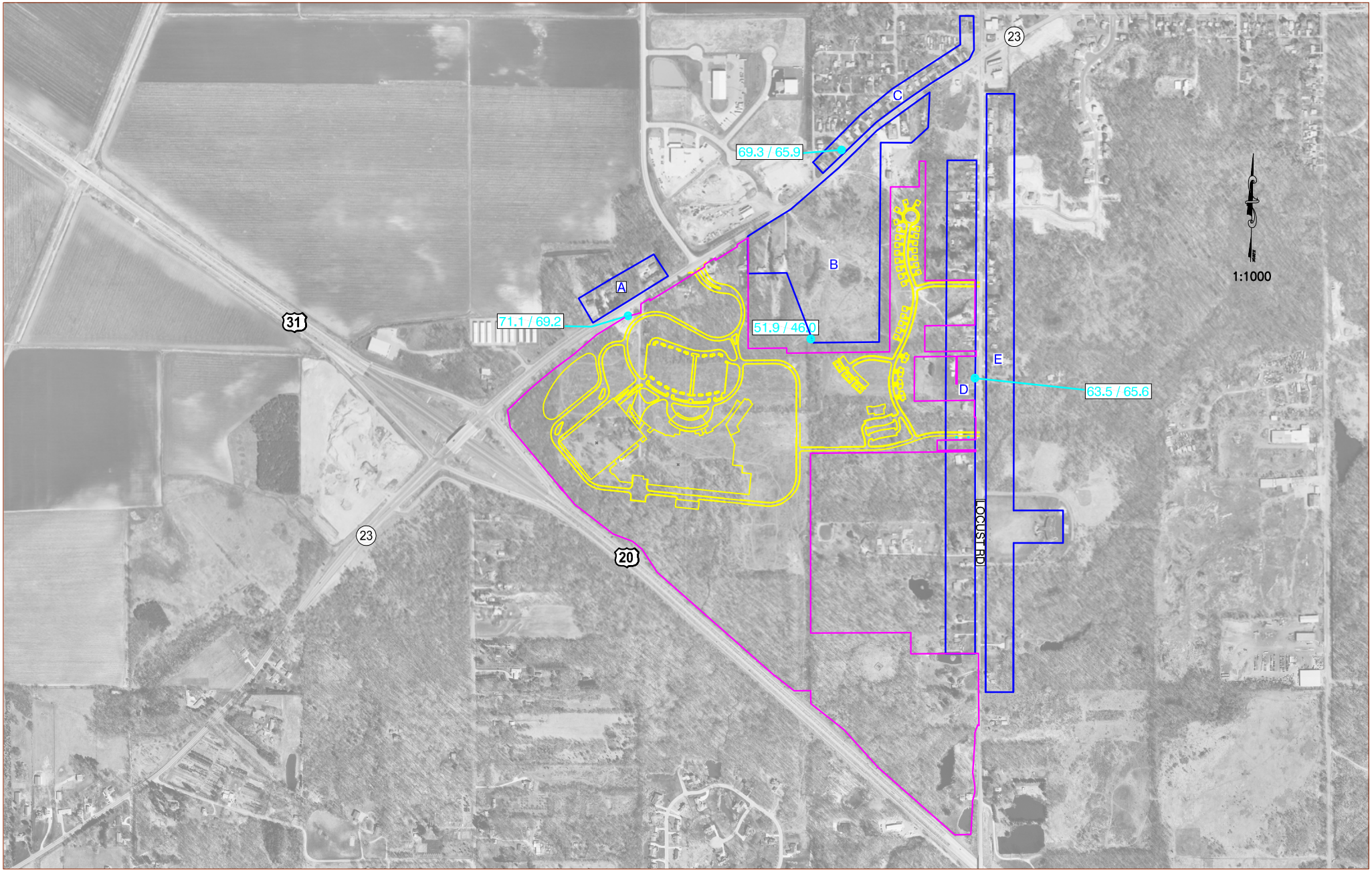

LEGEND

NOISE RECEPTOR GROUPS

AM / PM (dBA) FIELD MEASUREMENT LOCATIONS AND NOISE LEVELS

PROPOSED SITE PROPERTY BOUNDARY

ALTERNATIVE A IMPROVEMENTS

Figure 3.10-3

NOISE MEASUREMENT AND RECEPTOR LOCATIONS
ALTERNATIVE A

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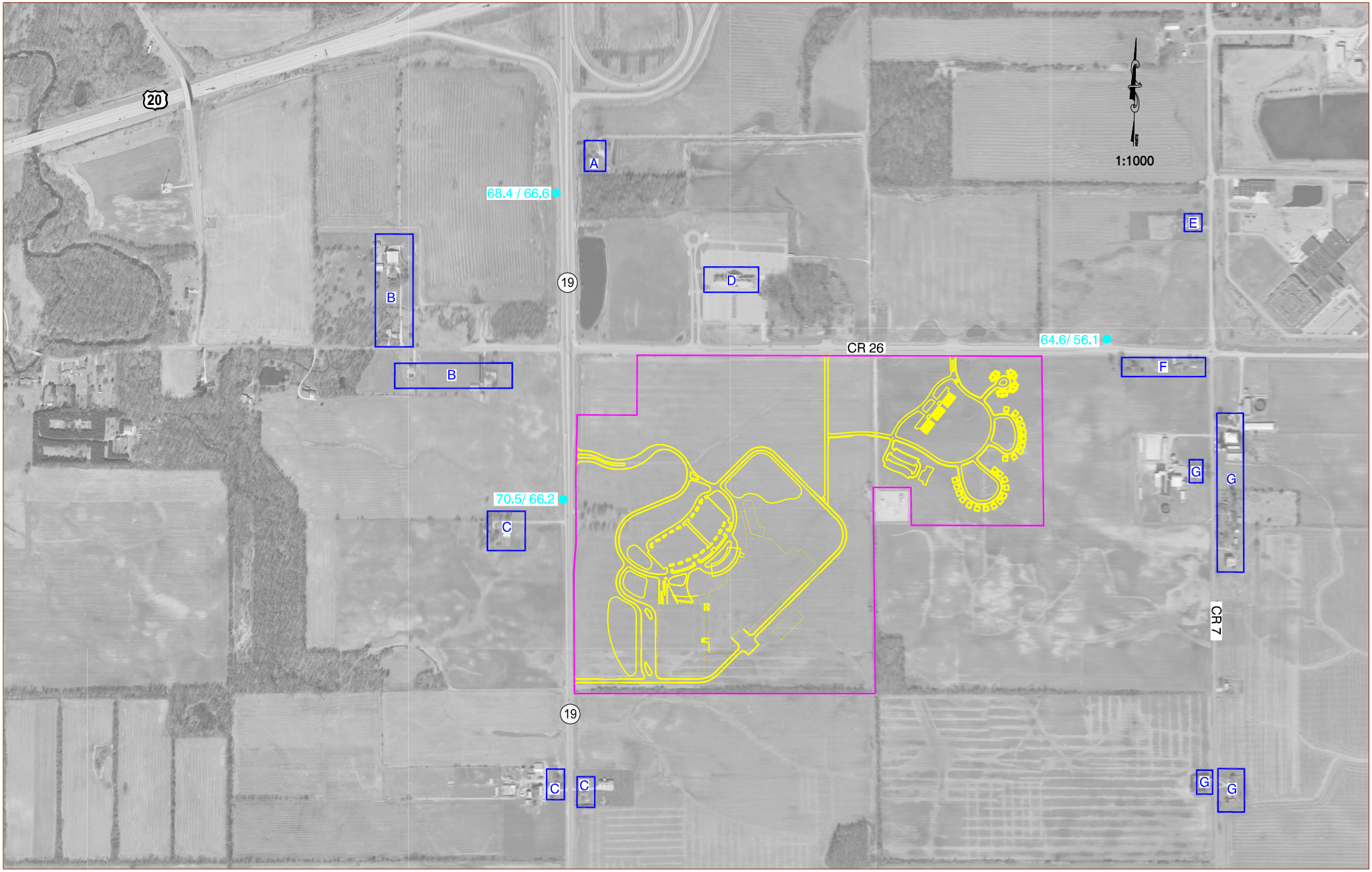

LEGEND

NOISE RECEPTOR GROUPS

AM / PM (dBA) FIELD MEASUREMENT LOCATIONS AND NOISE LEVELS

PROPOSED SITE PROPERTY BOUNDARY

ALTERNATIVE A IMPROVEMENTS

Figure 3.10-4

NOISE MEASUREMENT AND RECEPTOR LOCATIONS
ALTERNATIVE B

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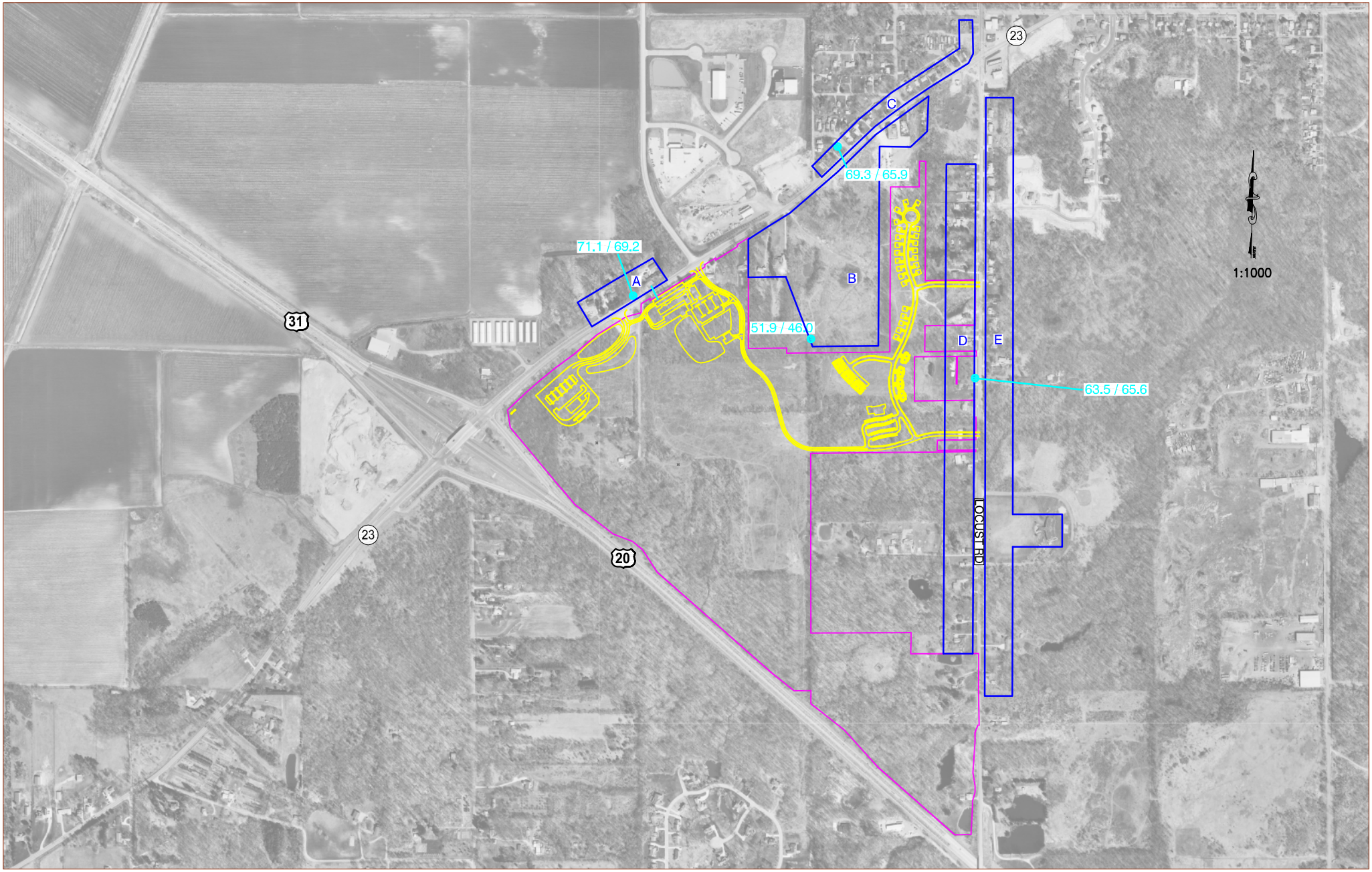

LEGEND

NOISE RECEPTOR GROUPS

AM / PM (dBA) FIELD MEASUREMENT LOCATIONS AND NOISE LEVELS

PROPOSED SITE PROPERTY BOUNDARY

ALTERNATIVE A IMPROVEMENTS

Figure 3.10-5

NOISE MEASUREMENT AND RECEIVER LOCATIONS
ALTERNATIVE C

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In order to define existing noise levels at the NRGs, ambient noise measurements were taken within the project area. Representative ambient noise measurements within the project area provide a general assessment of the overall noise levels in the project area. The collection of ambient noise measurements was conducted on March 26 and 28, 2013 using a Quest Soundpro DL noise dosimeter. A total of four existing noise level measurements were collected at representative receptor locations throughout the project area during the A.M. and P.M. peak hour traffic periods (project area noise is predominantly generated by traffic on the adjacent roadways). Fifteen minute recording durations were used. The noise measurement locations are shown on **Figures 3.10-3** and **3.10-5**, while the noise measurement results are provided in Table 3.10-2. Copies of the Ambient Noise Measurement Logs are included in **Appendix F**.

As indicated in Table 3.10-2, ambient noise levels in the project area ranged from 63.5 to 71.1 dBA at the various NRGs. Though part of this range is above FHWA thresholds found in 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction,* they are consistent with levels expected for a semi-rural area affected by traffic noise. The highest readings were measured nearest to US-20/31 while readings at the NRGs located further from the major roadways were below FHWA regulations.

Elkhart Site

Existing noise-sensitive receptors in the immediate project area mainly consist of scattered single-family homes to the north, east, and west of the project site. An evaluation of existing traffic volumes and the proximity of the receptors to local roadways was performed to establish the NRGs. The NRGs are shown on **Figure 3.10-4**, while Table 3.10-2 provides a description of each NRG.

In order to define existing noise levels at the NRGs, ambient noise measurements were taken within the project area. The collection of ambient noise measurements was conducted on March 27 and April 3, 2013. A total of three existing noise level measurements were collected at representative receptor locations throughout the project area during the A.M. and P.M. peak hour traffic periods (project area noise is predominantly generated by traffic on the adjacent roadways). Fifteen minute recording durations were used. The noise measurement locations are shown on **Figure 3.10-4**, while the noise measurement results are provided in Table 3.10-2. Copies of the Ambient Noise Measurement Logs are included in **Appendix F**.

As indicated in **Table 3.10-2**, ambient noise levels in the project area ranged from 58.1 to 70.5 dBA at the various NRGs. Though part of this range is above FHWA thresholds found in 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction,* they are consistent with levels expected for semi-rural area affected by local traffic noise.

Table 3.10-2
Existing Noise Levels

Noise Receptor Group*	Noise Receptor Group Description	Measured DBA**	
		AM	PM
South Bend Site			
A	2 single-family homes	71.1	69.2
B	6 single-family homes, 1 restaurant, 1 apartment complex	69.3	65.9
C	15 single-family homes	69.3	65.9
D	17 single-family homes	63.5	65.6
E	22 single-family homes, 1 church	63.5	65.6
Elkhart County Site			
A	1 single-family home	68.4	68.6
B	4 single-family homes	68.4	68.6
C	3 single-family homes	70.5	66.2
D	1 church	64.6	56.1
E	1 single-family home	64.6	56.1
F	3 single-family homes	64.6	56.1
G	8 single-family homes	64.6	56.1

*See Figures 3.10 -3, 3.10-4, 3.10-5 for receptor locations

**All noise measurements are Hourly Leq

3.10.2 Hazardous Materials

Hazardous materials are subject to numerous laws and regulations at all levels of government. In relation to tribal lands, presidential memorandums outline Federal Indian Policy, and provide direction and guidance for federal agencies regarding the administration of their responsibilities on Indian reservations and tribal lands. However, these agencies recognize that tribal governments are sovereign entities and thus these agencies are to work directly with these tribal governments in their capacity as independent entities, and not as political subdivisions of other governments. This is broadly described as a "government-to-government" relationship.

At the federal level, human exposure to chemical agents, and in some cases the environment and wildlife, is regulated primarily by four regulatory agencies: The U.S. Environmental Protection Agency, the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA) and the Consumer Product Safety Commission. The Consumer Product Safety Commission plays a limited role (primarily the labeling of consumer products) in regulating hazardous substances as they pertain to the proposed project. The FDA primarily regulates food additives and contaminants, human drugs, medical devices, and cosmetics. Similarly, the FDA plays a limited role in regulating hazardous substances as they pertain to the proposed project. In

addition to these regulatory agencies, the U.S. Department of Transportation regulates the interstate transport of hazardous materials.

An inventory of known and potential hazardous substances and hazardous waste generators was conducted for the South Bend and Elkhart Sites. A comprehensive search of federal, state, and local agencies' databases was conducted for the project alternatives according to guidance established by the American Society of Testing and Materials (ASTM). These databases contain information on hazardous waste generators, handlers, disposal sites, and incidents. Environmental Data Resources, Inc. (EDR) was utilized to perform this database search of the South Bend and Elkhart Sites (**Appendix G**).

Phase I Environmental Site Assessments (Phase I ESAs) were conducted by Wightman Environmental, Inc., for the South Bend and Elkhart Sites in May 2009. The investigations were conducted in accordance with the ASTM Standard E 1527-97, Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. These assessments included review of federal and state regulatory agency records and databases, interviews with pertinent individuals and property owners, site inspections, and aerial photography reviews. Such assessments are a requirement of the Department of the Interior (DOI) to avoid financial liability for cleanup of contaminants under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) 42 U.S.C. Section 9601. The Phase I ESAs will be updated prior to trust acquisition because DOI Policy 602 DM2 requires that a Phase I Assessment be no more than 12 months old at the time of the trust acquisition. The update is required to ensure that no changes have occurred regarding the presence of hazardous material since the Phase I ESA documenting the original conditions on the site.

The scope of the regulatory information queried for both the South Bend and Elkhart Sites included but was not limited to the following databases:

- The National Priority List. Identifies abandoned or uncontrolled hazardous waste sites identified by the EPA for priority remedial action under the Federal Superfund Program
- Comprehensive Environmental Response, Compensation, and Liability Information System Database (CERCLIS). Identifies sites the EPA is currently investigating for the release or threatened release of hazardous substances pursuant to the CERLCA of 1980
- CERCLIS No Further Remedial Action Planned (NFRAP). Identifies former CERCLIS sites that have been de-listed because a lack of significant contamination was found
- Resource Conservation and Recovery Act (RCRA) Notifiers. Identifies registered hazardous waste generators, transporters, treatment, storage, and disposal facilities in the vicinity of the study area. The databases maintained under this Act include: Generators and Violators List; RCRA Corrective Actions List (CORRACT); and RCRA Treatment, Storage, or Disposal List

- Emergency Response Notification System database. Identifies EPA documented releases of oil and hazardous substances. This database was reviewed to determine whether past spill events have occurred in the study area
- State Hazardous Waste Site (SHWS). The Indiana Department of Environmental Management maintains a list of statewide priority hazardous waste sites that are equivalent to CERCLIS sites
- Underground Storage Tank Facility List. The underground Storage Tank (UST) facilities database is maintained by IDEM to track permitted petroleum storage tank sites
- Leaking Underground Storage Tank Sites (LUST). This list is maintained by IDEM of facilities where a known UST release has occurred
- Solid Waste Facilities Database. This database is a listing of solid waste disposal facilities registered and tracked by the state. The facilities tracked include solid waste disposal sites as well as transfer and processing stations
- BULK List. This list is comprised of registered dry or liquid bulk fertilizer and pesticide storage facilities
- Inactive Solid Waste Facilities. This database contains historical information of the location of abandoned landfills and solid waste disposal sites
- Brownfields. These lists (U.S., state, and local) contain industrial or commercial properties that have been abandoned, are inactive, or underutilized, on which expansion or redevelopment is complicated due to actual or perceived environmental contamination

No listed hazardous waste sites, such as federal or state Superfund sites and hazardous waste treatment, storage or disposal facilities, landfills, or facilities with known toxic releases were identified or recorded at the South Bend or Elkhart Sites. Based on the condition and history of the South Bend Site, there is no reason to suspect the site could qualify as a Superfund or similar waste site requiring corrective action. In addition, no Superfund sites are located within 6000 feet of the South Bend Site (the closest Superfund site is Whiteford Sales and Service Inc./Nationalease approximately 1.18 miles north-northeast of the South Bend Site at 2020 West Sample Street, South Bend IN 46619). Also, as mandated under CERCLA, the EPA recently updated the Superfund's National Priorities List (NPL) and added the Beck's Lake site to the list on December 12, 2013; this site is located at the intersection of Washington and Falcon Streets, approximately 2.3 miles north of the proposed South Bend project site. This area located immediately west of LaSalle Park was once used as a dump and a landfill, and potential waste materials included but were not limited to asbestos, plating wastes, solvents, paint wastes, oils and sludges, and foundry sand. Dumping ended in the mid-1950s, but elevated levels of arsenic, lead, and cadmium have been detected in surface soils. The main concern for the Beck's Lake site is exposure to arsenic in the residential and park soils (EPA 2013c). The record review did not reveal, and there is no known evidence that the South Bend Site, which has historically been utilized for agricultural operations and residential development, contains underground storage tanks. In addition, there are no identified hazardous material spills or other major issues identified on the South Bend Site, and the records review

revealed no indication that regulated quantities of agricultural chemicals were stored on the site, that the site was ever used as a farm waste or other waste disposal facility or of soil or groundwater contamination.

No Superfund sites are located within 14,000 feet of the Elkhart Site (the closest Superfund site is the Conrail Elkhart Rail Yard approximately 2.8 miles north-northwest of the Elkhart Site at 2600 West Lusher Avenue, Elkhart, IN 46517). The Elkhart Site has historically been utilized for large-scale agricultural operations, which commonly contain an on-site fuel source, such as an underground storage tank. During site inspections, there were no visual indicators of current or former UST systems, although it is possible that the Elkhart Site has historically contained some type of fuel storage system.

3.10.2.1 South Bend Site

According to the regulatory agency database search conducted in May 2009, seventeen (17) facilities registered with state and/or federal agencies were identified within the relative distances prescribed by the ASTM (see EDR report in **Appendix G**). Two of the facilities are listed in multiple databases (* designates these facilities), therefore only 15 facilities are listed below. The following facilities were reported in the regulatory agency database search:

1. Chippewa Avenue Area Groundwater Site located at Chippewa Avenue and Linden Road South Bend, IN 46614, about 0.5 mile southeast of the South Bend Site, is a Federal CERCLIS site. This site is not listed as a federal facility and is not contained on the National Priority List.
2. *New Energy Corporation located at 3201 W. Calvert Street South Bend, IN 46613, about 0.368 mile north northwest of the South Bend Site, is a Federal CERCLIS NFRAP site. The site is not listed as a federal facility and is not contained on the National Priority List. This site has been given a no further remedial action planned status. This site is also listed as a state Voluntary Cleanup Program site. The status of the site is listed as Covenant not to sue issued by Governor via IDEM, and no restrictions are listed as in-place at the facility.
3. Ashland Distribution Company located at 1817 W. Indiana Avenue South Bend, IN 46613, about 0.601 miles northeast of the South Bend Site, is a Federal CORRACTS site. The entire facility has been given a medium corrective action priority and the North American Industry Classification System (NAICS) code for the facility is listed as hazardous waste collection.
4. AM General Division of LTV located at 701 W. Chippewa Avenue South Bend, IN 46680, about 0.817 mile southeast of the South Bend Site, is a Federal CORRACTS site. This entire facility has been given a high corrective action priority and no NAICS codes were reported from this facility.
5. Steel Warehouse Company Incorporation located at 2722 W. Tucker Drive South Bend, IN 46619, about 0.827 miles north of the South Bend Site, is a Federal CORRACTS site. The entire facility has been given a medium corrective action priority and no NAICS codes were reported from the facility.

6. ARCO located at 20630 W. Ireland Road South Bend IN, about 0.373 mile southeast of the South Bend Site, is a State SHWS site (State and Tribal equivalent to CERCLIS). Media affected at the site is listed as soil and groundwater and the contaminant is listed as petroleum.
7. Toro Wheel Horse Facility located at 515 West Ireland Road South Bend, IN 46614, about 0.876 mile southeast of the South Bend Site, is a State SHWS site (State and Tribal equivalent to CERCLIS). Media affected at this site is listed as soil and groundwater and the contaminant is listed as solvents.
8. Waste Management of Indiana located at 20645 E. Ireland Road South Bend, IN 46614, about 0.372 mile south southeast of the South Bend Site, is a State LUST site. The media affected at this site is listed as soil. The site has been given a low priority and is currently listed as active.
9. Buckeye Terminals LLC-South Bend Terminal located at 20630 W. Ireland Road South Bend, IN 46614, about 0.373 mile south southeast of the South Bend Site, is a State LUST site. The site has been given a low priority and is currently listed as active.
10. *Deli Express 3 located at 2334 Prairie Avenue South Bend, IN 46614, about 0.081 mile (500 feet) north northeast of the South Bend Site, is a State LUST site. Affected media at the LUST site are listed as soil, groundwater, surface water, wellhead protection area, and ecologically sensitive area. This site has been given a medium priority and is listed as active. This site is also listed as a State UST site. Located approximately 0.25 mile north northeast of the South Bend Site, this site is listed as formerly containing four (4) gasoline USTs, one (1) diesel UST, and one (1) kerosene UST, all of which are listed as permanently out of service. The site is also listed as currently having two (2) gasoline USTs and one (1) kerosene UST in service.
11. BOC Gases located at 3809 W. Calvert Street South Bend, IN 46613, about 0.498 mile west northwest of the South Bend Site, is a State LUST site. The affected media at this site is listed as soil and wellhead protection area. This site has been given a low priority and is currently listed as active.
12. Metal Resources Corporation located at 3113 S. Gertrude Street South Bend, IN 46680, within 0.25 mile southeast of the South Bend Site, is a State UST site. The site is listed as formerly containing three (3) gasoline USTs, one (1) diesel UST, and one (1) kerosene UST, all of which are listed as permanently out of service. The site is also listed as currently having two (2) gasoline USTs and one (1) kerosene UST in service.
13. Fire Station 5 located at 2221 Prairie Avenue South Bend, IN 46613, about 0.119 mile northeast of the South Bend Site, is a State UST site. The site is listed as formerly containing one (1) diesel UST, which is listed as permanently out of service.
14. Ser-Us-Rite Inc. V W Renair located at 1945 Prairie Avenue South Bend, IN 46613, about 0.306 mile northeast of the South Bend Site, is a State Brownfields site. No additional information regarding the Brownfields listing of the site was provided.
15. Prairie Automotive located at 1954 Prairie Avenue South Bend IN, 46613, about 0.308 mile northeast of the South Bend Site, is a Federal U.S. Brownfields site. This site is contained on the list due to its historical use as an automobile service station.

The initial Phase I ESAs revealed that three parcels within the South Bend Site (Parcels 4, 6, and 9) possessed recognized environmental conditions (RECs) such as abandoned automobiles and

snowmobiles, aboveground storage tanks (AST), empty drums, unknown pipes, and miscellaneous debris. In response to these findings, Wightman Environmental Inc. conducted a limited Phase II Assessment (Phase II ESAs) at each parcel in order to further investigate these potential concerns.

At Parcel 4, three (3) RECs were identified:

1. Numerous abandoned automobiles, snowmobiles, machinery, and automobile parts were observed across the subject property.
2. A fuel oil AST was identified on the south side of the residence on the subject property.
3. Two unknown pipes were identified exiting the ground near the southernmost out building on the subject property.

To investigate the contamination potential of the RECs, eleven (11) hand-augered soil pits were bored 5-feet below ground surface near these RECs. Frequent samples from the borings were analyzed for visual and/or olfactory indicators of contamination, and a photoionization detector (PID) was used to field scan the soil samples for organic contamination. Analyses revealed no visual or olfactory indicators of impacted soils, and PID readings did not exceed 2.1 ppm, indicating that the samples did not contain elevated concentrations of organic compounds. Interviews with the current landowner revealed that the unknown pipes are part of a former clothesline. Therefore, it was determined that the RECs on Parcel 4 were adequately addressed with the limited Phase II ESA and that no further environmental investigation is warranted at this time. It is recommended that the abandoned automobiles, machinery, fuel oil AST, and miscellaneous debris be removed from the property and properly disposed of or recycled.

At Parcel 6, one (1) REC was identified:

1. An aboveground storage tank was identified near a small out building behind the garage on the subject property.

To investigate the contamination potential of this REC, hand-augered soil bores near the AST were installed at a depth of 4 ft. below ground surface. Soils were continuously sampled from the auger and analyzed for visual and olfactory indicators of contamination. Samples were also field scanned with a PID for organic contamination. Analyses revealed that a thin layer of soil at the surface (top 6 inches) was affected by the AST. This was determined based on elevated PID readings, visual soil staining, and heating oil odor. Since soils located deeper than 6 inches did not appear to be adversely affected, the impacted surface soils beneath the AST represent *de minimis* conditions. It is suggested that the top 6 inches of soil near the AST be removed and properly disposed. Based on the results of the limited Phase II ESA, no further environmental investigation is warranted at this time.

At Parcel 9, three (3) RECs were identified:

1. The subject property contains numerous abandoned automobiles.
2. The subject property contains an aboveground storage tank; former contents are unknown.
3. The subject property contains empty drums, machinery, tires and miscellaneous debris.

To investigate the contamination potential of the RECs, fifteen (15) hand-augered soil pits were bored 5-feet below ground surface near these RECs. Frequent samples from the borings were analyzed for visual and olfactory indicators of contamination, and a PID was used to field scan the soil samples for organic contamination. Analyses revealed no visual or olfactory indicators of impacted soils, and PID readings did not exceed background levels, indicating that the samples did not contain elevated concentrations of organic compounds. It was determined that the limited Phase II ESA addressed any potential concerns related to the RECs and that no further environmental investigation is warranted at this time. It is recommended that the automobiles, AST, drums, and debris be cleared from the site and properly disposed of or recycled.

3.10.2.2 Elkhart Site

According to the regulatory agency database search conducted in May 2009 by EDR, four (4) sites registered with state and/or federal agencies were identified within the prescribed distances by the ASTM (see EDR report in **Appendix G**). Three of these sites are the Elkhart County Landfill, which is located approximately 0.5 mile east of the Elkhart Site in the northeast quadrant of the intersection of County Road 26 and County Road 7. The following sites were reported in the regulatory agency database search:

1. Elkhart County Landfill, located at 59308 CR 7S Elkhart IN, 46517 about 0.372 mile east-northeast of the Elkhart Site, is a CERCLIS NFRAP site. It is not listed as a federal facility and the site description has not been reported.
2. Elkhart County Landfill, located at 59530 CR 7S Elkhart, IN 46517 about 0.372 mi east-northeast of the Elkhart Site, is a State Solid Waste Facilities Database site. It is not listed as a federal facility, and is categorized as a Municipal Solid Waste Landfill that is active and open to the public.
3. Elkhart County Solid Waste Disposal, located at 59308 CR 7S Elkhart, IN 46517 about 0.372 mi east northeast of the Elkhart Site, is a State UST site. According to the report, the site formerly contained one (1) diesel UST and one (1) gasoline UST, the quantities of which are not listed. The USTs are listed as permanently out of service.
4. A 22-gallon diesel spill reported near the intersection of Nappanee Street and U.S. Highway 20 is listed on the IDEM Indiana SPILLS list. The site is located at St. RD 19 E/RT 20 Bypass Elkhart IN 46515, approximately 1900 feet north of the Elkhart Site. The diesel spill was reported from the site due to a transportation truck release, where 22 gallons of material were spilled, and 22 gallons of material are listed as recovered. Groundwater is not listed as affected and the approximate area affected is listed as 320 square feet.

3.10.3 Visual Resources

Visual resource data was obtained from the previously discussed habitat, vegetation and land use data. The central core of the project development area of the site has been either in tillage agriculture or intense pasture use which resulted in the removal and alteration of the majority of native vegetation, likely over 100 years ago. This area is transitioning to old field meadows consisting primarily of non-native weedy herbaceous and woody species. Drainage ditches along the perimeters of these agricultural and grazing lands have established as fence row plant species typically comprised of low quality native and non-native woody material and with little diversity. The wooded district north of US 20, along the south side of Prairie Avenue, is currently wooded, but since it has been intensely tilled or pasture, the woods are not of remnant quality. On the north and east perimeter of the site and in smaller portions the vegetation is typically residential-type landscapes.

Both emergent and forested wetlands on site are of low to moderate quality due in part from past land management practices and becoming degraded by storm water runoff.

Though, the three wood areas, one north of the project site, another west of the transmission lines and the other in the southeast corner, east of the transmission lines and north of US 31/20 are considered intact remnant landscape. If it had been continually managed through natural and past cultural fire practices, it would represent the surrounding historic landscape prior to timbering and agricultural disturbance.

These ambient landscapes will be cleaned up, restored and programmed appropriately; would be visible from throughout the site.

3.10.3.1 South Bend Site

Currently, there are no exterior overhead lighting fixtures within the property boundaries. Most exterior lighting sources will be from adjacent parcels which include seven (7) overhead light fixtures along the drive into Prairie Apartments to the north and approximately seventeen (17) overhead cobra style street lights along Locust Drive between US 23 and Prairie Drive. Along Prairie Avenue from US 23 interchange to New Energy Drive there are no overhead street lights

3.10.3.2 Elkhart Site

Currently, there are no exterior overhead light fixtures within the property boundaries. There are no overhead street light fixtures on either Co. Road 26 or Indiana 19. There are approximately forty-eight (48) overhead light fixtures to the north in the American Countryside Market parking lot and entry drive.

3.11 ENVIRONMENTAL JUSTICE

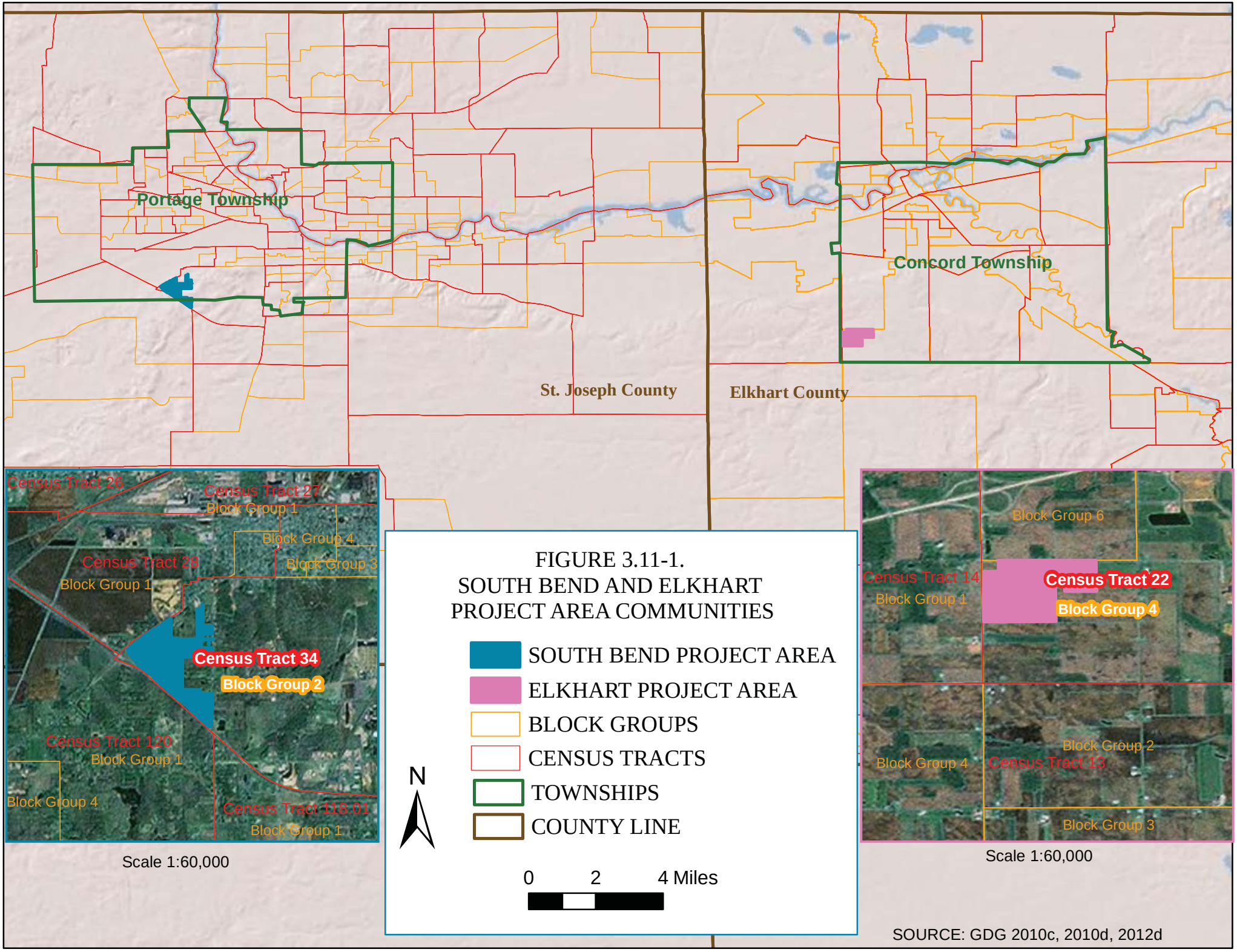
Title VI of the Civil Rights act of 1964 as amended in 1968, and *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, as amended, directs federal agencies to develop an Environmental Justice (EJ) Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations. The Council on Environmental Quality has oversight responsibility of the Federal Government's compliance with Executive Order 12898 and the National Environmental Policy Act. The CEQ, in consultation with the Environmental Protection Agency and other agencies has developed guidance to assist federal agencies with their NEPA procedures so that EJ concerns are effectively identified and addressed. According to the CEQ's Environmental Justice Guidance Under NEPA (1997), agencies should consider the composition of the affected area, to determine whether minority populations or low-income populations are present in the area affected by the proposed action, and if so, whether there may be disproportionately high and adverse environmental effects to these populations from implementation of the proposed action.

3.11.1 Environmental Justice (EJ) Methodology

The data used in this study to determine the potential for disproportionate impacts to low-income and/or minority populations include ethnicity, income, and employment data at the state, county, township, and census tract level, obtained from the 2010 United States Census Bureau. 2010 ethnicity data for block groups were also evaluated. See **Figure 3.11-1** for project area communities utilized in the EJ analysis of populations at the South Bend and Elkhart sites.

If ethnic minorities or persons of poverty do not exist, then documentation of these findings completes the EJ process and public involvement and mitigation measures would not be required. If these groups do exist within the affected area, then public involvement and outreach programs would need to be developed, and all project stakeholders (particularly minority and low-income groups that may be affected) would be invited to participate and provide input to the proposed project development process. Documentation of each stakeholders' interests, issues, and concern would be expressed in the public involvement and outreach program and in public comments on the Draft EIS.

The EJ disproportionate effects determination should take into account committed mitigation and enhancement measures and potential offsetting benefits to the affected minority and low-income populations. The EJ mitigation measures should reduce or offset adverse community impacts. Mitigation measures are developed through public involvement with affected minority and low-income community leaders and citizen groups. This process involves public participation and is used (in part) to minimize adverse community impacts. Community comments received during the September 27, 2012, scoping meeting were used in the evaluation of EJ effects. An additional public


Portage Township
Concord Township
St. Joseph County
Elkhart County
Census Tract 26
Census Tract 27
Block Group 1
Block Group 4
Block Group 3
Census Tract 28
Block Group 1
Census Tract 34
Block Group 2
Census Tract 120
Block Group 1
Block Group 4
Census Tract 118.01
Block Group 1
Scale 1:60,000
Block Group 6
Census Tract 14
Block Group 1
Census Tract 22
Block Group 4
Block Group 2
Block Group 4
Census Tract 13
Block Group 3
Scale 1:60,000
FIGURE 3.11-1.
SOUTH BEND AND ELKHART
PROJECT AREA COMMUNITIES
SOUTH BEND PROJECT AREA
ELKHART PROJECT AREA
BLOCK GROUPS
CENSUS TRACTS
TOWNSHIPS
COUNTY LINE
N
0 2 4 Miles
SOURCE: GDG 2010c, 2010d, 2012d

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meeting would be held after release of the Draft EIS for public comment to allow the community to express additional concerns and discuss any necessary mitigation measures.

In terms of analyzing ethnicity characteristics, data from Census Tracts were used, since these small, relatively permanent statistical county subdivisions are generally characterized by much smaller percentages of ethnic populations; therefore providing a more accurate representation of the ethnic groups within each community. The results of the Census Tract Analysis were used to determine whether there is potential within the Project Area Communities for disproportionate effects to ethnic minorities or poverty status persons. The percentage of ethnic minorities and persons of poverty status for the County were used as thresholds for comparison. Block group data were also be used in EJ determinations, as this data describes even a smaller geographic area than Census Tracts and can provide an acutely accurate representation of the population; however, data is only available at this level for ethnicity characteristics, and could not be used to analyze low-income populations or employment statistics in the Project Area.

CEQ's Environmental Justice Guidance under NEPA defines minority as individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. According to the same CEQ guidelines, minority populations are considered EJ populations if "(a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage in the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis…a minority population also exists if there is more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds" (CEQ 1997).

In addition to identifying the proportion of the population of individual Census Tracts that are composed of minority individuals, analysts should attempt to identify whether highly concentrated pockets of minority populations are present in specific geographic areas. The guidance also advises agencies to consider both groups of individuals living in geographic proximity to one another, and geographically dispersed/transient sets of individuals, where either type of group "experiences common conditions" of environmental exposure or effect within the guidance provided for minority population. This can result from cultural practices, educational backgrounds, or the median age of community residents (e.g., disproportionate numbers of elderly residents, children, or women of child-bearing age may be more susceptible to environmental risks).

Data used in this analysis to determine the potential for disproportionate effects to low-income and/or minority populations are presented in Table 3.11-1, 2010 Population and Ethnicity Characteristics for Project Block Groups, Census Tracts and Project Area Communities, and Table 3.11-2, 2006-2010 5-year estimate of Income, Poverty Status, and Unemployment for Project Census Tracts and Project Area Communities. Using this 2010 socioeconomic data and the CEQ's analysis criteria described above, the population at the South Bend site would be considered an EJ

population because the aggregate minority group percentage of the population at the Census Tract level (and Block Group level) exceeds that of the County. Study area census data indicate that minority groups comprise 31.4 percent of the Census Tract 34 population (and 42 percent of the Block Group 2 population), and account for 15.5 percent of the St. Joseph County population. Additionally, the median household income for Census Tract 34, $34,636, is lower than that of St. Joseph County, $44,644. Also, the percentage of individuals living below the poverty level and the percentage of unemployed labor force are both higher in the Census Tract 34 population than in St. Joseph County.

Similarly, the population at the Elkhart site would also be considered an EJ population because the aggregate minority group percentage of the population at the Census Tract level (and Block Group level) exceeds that of the County. Minority groups account for 20.4 percent of the Census Tract 22 population (and 10.9 percent of the Block Group 4 population), while only 7.3 percent of the Elkhart County population is comprised of the same minority groups. Additionally, the median household income is lower than that of Elkhart County, $47,697. Also, the percentage of individuals living below the poverty level and the percentage of unemployed labor force are both higher in the Census Tract 22 population than in Elkhart County.

3.11.2 Race

3.11.2.1 South Bend

According to the 2010 Census, approximately 95 percent of the population within Census Tract 34, where the proposed South Bend Site is located, can be classified as people of "one race." Of these residents, 54.3 percent are white, 29.5 percent are black or African American, 1.1 percent are American Indian/Alaska Native, 0.8 percent are Asian (including Asian Indian, Chinese, Japanese, Filipino, Korean, Vietnamese or other), 0.02 percent are Native Hawaiian/Other Pacific Islander, and 14.3 percent are classified as other. Similar ethnic proportions characterize the populations of one-race residents of Block Group 2, Portage Township, City of South Bend, St. Joseph County, and the State of Indiana (Table 3.11-1).

3.11.2.2 Elkhart

According to the 2010 Census, approximately 96 percent of the population within Census Tract 22, where the Elkhart Site is located, can be classified as people of "one race." Of these residents, 59.1 percent are white, 18.5 percent are black or African American, 0.7 percent are American Indian/Alaska Native, 1.1 percent are Asian (including Asian Indian, Chinese, Japanese, Filipino, Korean, Vietnamese or other), 0.09 percent are Native Hawaiian/Other Pacific Islander, and 20.5 percent are classified as other. Similar ethnic proportions characterize the populations of one-race residents of Block Group 4, Concord Township, City of Elkhart, and Elkhart County (Table 3.11-1).

3.11.3 Income and Employment

3.11.3.1 South Bend

According to the United States Census Bureau 2006-2010 American Community Survey, the median household income in Census Tract 34 is $34,636, and approximately 34.3 percent of all people in this Census Tract are living below the poverty level. The median household income is similar in Census Tract 34, Portage Township, and the City of South Bend (approximately $34,000), and increases by approximately $10,000 at the county level (Table 3.11-2). In general, as the population of the South Bend Project Area community increases (see population estimates in Table 3.11-1), the percentage of persons below the poverty line decreases (Table 3.11-2). Additionally, the percent of the labor force that is unemployed is the highest in Census Tract 34 (23 percent) of all geographic areas analyzed. The unemployment percentage decreases as the Project Area Community population size increases.

3.11.3.2 Elkhart

According to the United States Census Bureau 2006-2010 American Community Survey, the median household income in Census Tract 22 is $41,270, and approximately 19.3 percent of all people in this census tract are living below the poverty level. Of the Project Area Communities evaluated, the City of Elkhart has the lowest median household income ($35,654) and the highest percentage of persons living below the poverty level (22.7 percent). Additionally, the percent of the labor force that is unemployed is higher in Census Tract 22 than in Elkhart County or the State of Indiana, but the City of Elkhart has the highest percentage of unemployment (14.1 percent) of all project area communities evaluated (Table 3.11-2).

3.11.4 State of Indiana

According to the 2010 Census, approximately 86 percent of one-race individuals living in the State of Indiana are white (Table 3.11-1). Of all the project area communities evaluated, the State of Indiana has the highest median household income ($47,697), lowest percentage of persons living below the poverty level (13.5 percent), and lowest level of unemployment (8.4 percent of the labor force) (Table 3.11-2).

Additionally, according to the 2012 Pokagon Band Fee-to-Trust Application (BIA 2012), 507 individuals are currently enrolled in the Pokagon Band of the Potawatomi Indians in the State of Indiana. Of the enrolled persons, 90 of 132 individuals available for work were employed. Of these employed tribal members, 17 (19 percent) were below poverty guidelines (BIA 2005).

3.11.5 Additional EJ Parameters

During the scoping meeting held on September 27, 2012, attendees expressed concerns regarding increased alcoholism as a result of Project implementation. It is assumed that citizen concerns

stemmed from known co-morbidities between problem gambling and alcohol addiction (Petry et al. 2005). Based on data collected by the Substance Abuse Mental Health Services Administration (SAMHSA), alcohol dependence and abuse in the North Central region of Indiana (which includes both St. Joseph and Elkhart counties) was reported in 7.4 percent of persons aged 12 or older, which is higher than State levels (7.13 percent) and lower than the national figure (7.5 percent) (2010).

Table 3.11-1
2010 Total Population and Ethnicity Characteristics for Project Block Groups, Census Tracts and Project Area Communities

	Project Area Community	Total Population	Total Population "one race"	White	Black	AI/AN*	Asian	NH/ OPI**	Other
SOUTH BEND SITE	Block Group 2	788	743	371	299	8	5	0	60
	Census Tract 34	3,709	3,524	1,914	1,040	38	28	1	503
	Portage Township	93,063	89,002	55,924	24,362	478	1,220	54	6,964
	City of South Bend	101,168	96,944	61,199	26,906	478	1,318	64	6,979
	St. Joseph County	266,931	259,221	209,972	33,958	1,030	5,036	194	9,031
ELKHART SITE	Block Group 4	1,591	1,523	979	143	4	18	1	378
	Census Tract 22	8,363	8,012	4,736	1,486	52	88	7	1,643
	Concord Township	54,167	52,163	37,160	7,595	298	496	25	6,589
	City of Elkhart	50,949	48,884	33,672	7,862	290	452	33	6,575
	Elkhart County	197,559	192,634	163,792	11,307	747	1,915	81	14,792
State of Indiana		6,483,802	6,355,901	5,467,906	591,397	18,462	102,474	2,348	173,314

Source: U.S. Census Bureau, 2010 Census (USCB 2011).

*AI/AN-American Indian/Alaska Native

**NH/OPI-Native Hawaiian/Other Pacific Islander

Table 3.11-2
2006–2010 5-year Estimate of Income, Poverty Status and Unemployment for Project Census Tracts and Project Area Communities

	Project Area Community [1]	Median Household Income	Percent (%) of Persons Below Poverty Level	Percent (%) of Labor Force that is Unemployed
SOUTH BEND SITE	Census Tract 34	$34,636	34.3	23.0
	Portage Township	$34,159	25.6	14.4
	City of South Bend	$34,761	24.3	13.5
	St. Joseph County	$44,644	14.6	9.5
ELKHART SITE	Census Tract 22	$41,270	19.3	11.0
	Concord Township	$39,178	21.0	12.4
	City of Elkhart	$35,654	22.7	14.1
	Elkhart County	$47,258	13.7	9.9
State of Indiana		$47,697	13.5	8.4

Source: U.S. Census Bureau, 2006-2010 American Community Survey (USCB 2011),

[1] Income, poverty status, and unemployment data were not available for Block Groups

The data indicate that neighborhood poverty exposures appear to be associated with increased odds of alcoholic bingeing and an increased rate of weekly alcohol consumption (Cerdá et al. 2010). Individuals whom are frequently targeted for addiction treatment services in the public mental health system in Indiana typically have incomes at or below 200 percent of federal poverty level, based on the assumption that poverty and addiction disorders are highly correlated. Alcohol dependence for this group is estimated to be more than 1.5 times higher than the prevalence in the general population. In St. Joseph County, it was estimated that in 2008, there were approximately 37,870 individuals living below the federal poverty line (USCB 2009). Of these individuals, it is estimated that roughly 5800 (or 15.3 percent) were also living with a chronic drug or alcohol addiction (St. Joseph County Epidemiological Profile 2011). In addition, alcoholism has also been associated with long-term unemployment, where individuals are said to abuse alcohol as a means for coping with financial stress caused by job loss (Forcier 1988).

Data also indicate that alcohol is the most frequently used drug in the state of Indiana by all racial and ethnic groups, but that the prevalence of heavy alcohol use (defined as adult men having more than two drinks per day and adult women having more than one drink per day) does not appear to differ between racial/ethnic groups (State Epidemiology and Outcome Workshop [SEOW] 2007), and that the prevalence of binge drinking (defined as males having five or more drinks on one occasion and females having four or more drinks on occasion) is not significantly different between

racial/ethnic groups (SEOW 2010). Multiracial individuals in the state of Indiana report the highest rate of heavy alcohol consumption (7.6 percent), followed by whites (5.1 percent), blacks (4.9 percent), and Hispanics (4.8%) (SEOW 2007), while Hispanic ethnic groups in the state of Indiana report the highest rate of binge drinking (16 percent), followed by whites (13.6 percent), and blacks (12.8 percent) (SEOW 2010). More locally, St. Joseph County residents ages 18 and older, 54.4 percent of whites, 26.2 percent of blacks, and 48.1 percent of other races consumed alcohol monthly in 2008 (St. Joseph County Epidemiological Profile 2011). This data suggests that heavy alcohol consumption in Indiana does not appear to differ among racial/ethnic groups, that white individuals in St. Joseph County consume alcohol on a monthly basis more than other races, and that low-income populations may be more susceptible to developing an alcohol addiction. Alcoholism data for minority, low income, and unemployed populations in Elkhart County were unable to be obtained, but based on similar socioeconomic conditions and minority group percentages, alcohol dependence statistics are assumed to be similar to those for St. Joseph County.

Citizens at the scoping meeting also expressed concerns regarding problem gambling and related issues such as bankruptcy, divorce, domestic violence, suicide and crime as potential consequences of the casino development proposed in Alternative A at South Bend, and Alternative B at Elkhart (see Section 4.9 for information regarding the relationship between casinos and crime). A comprehensive review conducted by Williams et al. (2011) indicated that one of the main negative impacts of casino introduction is in fact an increase in problem gambling, and its related issues such as bankruptcy, divorce, domestic violence, suicide, and crime. However, most of the increase in problem gambling occurs after the initial introduction of gaming, with progressively fewer impacts occurring over the life of the casino (Williams et al. 2011). Another study indicated that casino introduction does systematically increase problem gambling among a portion of its patrons thus increasing bankruptcy rates, but patterns tend to be cyclical in nature with increases and decreases over time, and effects tend to be offset by the positive economic impacts generated from the casino operation (Goss and Morse 2005). Additionally, Williams and others (2011) found that lower income people consistently contribute a higher proportion of their income to gambling than do middle and high income groups, but that the average annual expenditure on gambling still tends to increase as a function of income class; therefore EJ populations may or may not be more likely to experience increased debt from gambling.

Based on the literature discussed above and the higher aggregate minority percentages, lower median income, higher percentage of persons living below the poverty level, and higher unemployment rates in the populations within both the South Bend and Elkhart project areas compared to St. Joseph County and Elkhart County, respectively, EJ populations in both locations may or may not be at a higher risk for alcohol dependence, problem gambling, and associated indices such as bankruptcy, divorce, domestic violence, suicide, and crime as a result of casino construction/ operation.